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ABSTRACT

By acquiring health-related knowledge, values, skills, and practices, children can be empowered to pursue a healthy life and to work as change agents for community health. This report of the WHO Expert Committee on Comprehensive School Health Education and Promotion reviews the global state of school health; identifies opportunities for and barriers to strengthening school health programs at international, regional, district, and local levels; and makes recommendations to strengthen school health infrastructures and health promotion. Chapter 1 presents key themes of the report, such as what framework is needed to guide the process of health promotion, and what arguments can persuade policymakers of the benefits of investing in school health programs. Chapter 2, "Trends in School Health," identifies school health trends, discusses the school's role, and uses HIV/AIDS, nutrition and food safety, tobacco use, psychological problems, and malaria as examples of how change strategies can be used in a planning framework. Chapter 3, "Strengthening School Health Programmes at the International, National, and Local Levels," discusses barriers and change strategies common to all levels and unique to particular levels; presents examples of effective programs at national and local levels; and discusses implementation issues. Examples are presented of services related to health, water and sanitation, nutrition and food safety, psychological and social needs, health promotion for school personnel, health education, physical education, personnel training, and program coordination. Chapter 4, "Research on School Health Programmes," summarizes relevant research and identifies research priorities. Indicators are presented for planning and monitoring school health programs; and the relationship of health to school organization is discussed. Chapter 5 presents recommendations for effectively p[illegible]oting

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Report of a WHO Expert Committee on Comprehensive School Health Education and Promotion

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Geneva, 18–22 September 1995

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1. Introduction

"Health is inextricably linked to educational achievements, quality of life, and economic productivity. By acquiring health-related knowledge, values, skills, and practices, children can be empowered to pursue a healthy life and to work as agents of change for the health of their communities".

Dr Hiroshi Nakajima
Director-General
World Health Organization

To encourage educational and health institutions and agencies to coordinate their efforts to promote health through schools, WHO convened an Expert Committee on Comprehensive School Health Education and Promotion in Geneva, Switzerland, from 18 to 22 September 1995. The meeting was opened on behalf of the Director-General by Dr N. P. Napalkov, Assistant Director-General, who stressed the importance of schools as a means of influencing the health and education of future generations.

The overall objective of the Expert Committee was to make recommendations for policy measures and actions that WHO (including its Regional Offices), other United Nations agencies, national governments, and nongovernmental organizations could apply to enable schools to use their full potential to improve the health of children and young people, school staff, families, and community members.

The Expert Committee noted that the past 50 years have brought unprecedented gains in health, education, and economic status: advances in average life expectancy; reductions in child death rates; and improved nutrition programmes, immunization levels, disease prevention, and school attendance around the world. Because of these advances, about 2.5 million fewer children will die in 1996 than in 1990 (*1*). As more children survive to school age, the number attending school, in at least the early levels,[1] has increased dramatically as well. In many nations there has been progress in achieving the goal of basic education for all. The proportion of the developing world's children now completing at least 4 years of primary schooling has reached 71% overall (*1, 2*). Moreover, a recent report concludes that "the formal education system is . . . the developing world's broadest and deepest channel for putting information at the disposal of its citizens" (*3*).

[1] "Levels", when used in this report to refer to groups of children in school, denotes those engaged in a particular year's work; they are usually numbered from the first (typically 5–6-year-olds) upwards.

1.1 Health and education

The World Health Organization's Expert Committee on School Health Services noted as long ago as 1950 that "to learn effectively, children need good health" (*4*). Research indicates that nutritional deficiencies and poor health in primary-school-age children are among the causes of low school enrolment, high absenteeism, early dropout, and poor classroom performance. Health is thus a key factor in school entry, as well as continued participation and attainment in school (*5, 6*). Moreover, education that provides children with both basic academic skills and specific knowledge, attitudes, and skills related to health is vital to their physical, psychological, and social well-being. This is true not only in the short term; such education lays the foundation for a child's healthy development through adolescence and across the entire life span.

A wide variety of health conditions affect learning. Among those that research (*5, 6*) has identified are: nutritional deficiencies (protein–energy malnutrition and iron, vitamin A, and iodine deficiency); helminth infections (especially schistosomiasis and infections with roundworm and other intestinal parasites); other infections; physical and mental disabilities; and problems related to sexual behaviour (early pregnancy, sexual violence, and sexually transmitted diseases).

1.2 Education and health

The connection between a child's health and education is a powerful one. Just as health exerts a powerful impact on the ability to learn, so too is regular attendance in school one of the essential means of improving health. The school itself — through its culture, organization, and management; the quality of its physical and social environment; its curricula and teaching and learning methods; and the manner in which students[1] progress is assessed — has a direct effect on self-esteem, educational achievement, and therefore the health of its students and staff (*7–9*). Thus schools are effective as health-promoting environments only to the extent that they are healthy as organizations. Moreover, when they are effective health-promoting organizations, they are in a position to enable students and staff to achieve, to acquire the tools and resources with which to do so, and to mediate among the various institutions and social structures that can contribute to the effort.

[1] "Student", as used in this report, refers to a child or adolescent in school.

The vast majority of the evidence gathered from research during the past 15 years supports the idea that the individual school can make a difference to students' progress. Besides articulating the characteristics of effective schools (including such elements as shared leadership, shared vision and goals, an environment conducive to learning, high expectations for all, purposeful teaching, monitored progress, and attention to students' rights and responsibilities), research has demonstrated unequivocally that under the right conditions all students can learn. One of these essential conditions is that students' health status should not inhibit their ability to learn (*9*).

The health benefits of education are especially pronounced with regard to girls. Evidence for the benefit of education to girls themselves, their future children, and their society is overwhelming. The single most important determinant of a child's health is its mother's level of education (*10–13*).

However, the school cannot affect health through the curriculum alone, or through the combination of curriculum and environment. The services available at or through the school — physical health services, prevention programmes, psychological health services, nutritional and food safety services, social services, physical education, and others — are the third partner in advancing health and education. Providing such services, as well as enlisting general support for and reinforcement of school health programmes, of necessity involves collaboration with families, other institutions, and other community members.

1.3 School health programmes

Programmes that promote health through schools (school health programmes), when delivered through schools that are themselves organized to promote health (health-promoting schools), are one of the essential means through which the twin goals of "Health for All by the Year 2000" (*14*) and "Education for All" (*15*) can be achieved. Such programmes provide a great opportunity, but the challenges are great as well.

Threats to health and education

Although monumental successes in improving child survival and education have been achieved, school-age children face threats that can undo what has been accomplished. Malnourishment, intestinal parasitic diseases, and other infectious diseases remain prevalent in many areas, thriving in milieus of rapid urbanization, poor sanitation, and lack of access to safe water; unstable political situations; and unstable economies. Where the common killer diseases of childhood have

been reduced or eliminated, they have sometimes been replaced by injuries, mental illness and behavioural problems, chronic diseases, and threats to health rooted in preventable social, behavioural, or environmental factors.

Rapid social change

Societies are changing rapidly. In many countries — developing and developed alike — traditional family and social structures have been abandoned or radically changed. Poverty deprives millions of children worldwide of housing, food, health care, and schooling. Children in rural areas and nomadic communities are not reached, or are poorly served by health institutions and programmes. Wars and civil chaos plague many regions, resulting in significant damage to children's health and education. The majority of deaths in these conflicts — as many as 80–90% — have been among civilians, most of them women and children. These conditions of want and dramatic social, physical, and economic uncertainty, and the resulting poor health of children, threaten children's opportunity to succeed in school and their ability to become healthy, responsible, productive members of society (*16*).

Conflicting messages

Young people[1] and adults are confronted with conflicting messages in many different settings. Although health professionals can explain the dangers of tobacco, the advertising and other media convey psychologically seductive messages that obscure the risk. Programmes to reduce early sexual intercourse among young people or the sexual practices that contribute to the devastating spread of HIV/AIDS are carefully developed and implemented but can be undermined by social pressures or sexual abuse and exploitation of the young.

The changing role of the school

As societies change, so do schools. The tasks they are now asked to undertake have vastly expanded; in many places they have become the primary institution responsible for socializing children. Yet the resources with which to accomplish that task are often not available. Moreover, existing resources are often ill-used, inasmuch as the unmet health needs of students result in poor attendance, early dropout, and the repetition of levels. In some places there is conflict about the role that it is appropriate for the school to adopt in addressing children's health.

[1] "Young people", as used in this report, refers to children and adolescents of school age.

1.4 Efforts to promote health through schools

Promoting the health of children through schools has been an important goal of WHO, UNESCO, UNICEF, and other international agencies since the 1950s. Major international meetings to improve school health include: the WHO Expert Committee on School Health Services in 1950, the WHO Expert Committee on Health Education in 1954, the Joint WHO/UNESCO Expert Committee on Teacher Preparation for Health Education in 1959, the UNESCO/WHO collaboration to publish *Planning for health education in schools* in 1966, the WHO Expert Committee on New Approaches to Health Education in Primary Health Care in 1983, the WHO/UNICEF International Consultation on Health Education for School-age Children in 1985, the Technical Discussions on The Health of Youth at the Forty-second World Health Assembly in 1989, the WHO/UNESCO/ILO World Consultation on AIDS for Teachers' Union Representatives in 1990, the WHO/UNESCO/UNICEF Consultation on Strategies for Implementing Comprehensive School Health Education/Promotion Programmes in 1991, and the WHO/UNESCO Global Conference on School Health and HIV Prevention in 1995.

By WHO's definition, health is understood not merely as freedom from disease, but as a state of complete physical, mental, and social well-being (*14*). Health professionals from many countries have agreed that "health is created and lived by people within the settings of their everyday life; where they learn, work, play and love. Health is created by caring for oneself and others, by being able to take decisions and have control over one's life circumstances, and by ensuring that the society one lives in creates conditions that allow the attainment of health by all its members" (*17*).

Just as an environment for the attainment of health is created by people themselves, there is likewise a need for them to create an environment for educational attainment within schools. At a time when schools as institutions and systems are undergoing rapid and pervasive change, everyone within a school — students, staff, and administrators alike — needs to become in some sense an agent of change (*18*). Creating an environment that will promote both health and education is a task for all.

1.5 The Expert Committee's terms of reference

The Expert Committee's terms of reference were:

- To review:
  — the global state of school health;

— how schools are influencing the health of preschool children, school-age children, non-students, school personnel, families, and other community members.

- To identify opportunities for and barriers to strengthening school health programmes at international, regional, district, and local levels.

- To make recommendations aimed at strengthening school health infrastructure and school health promotion activities that will:
  — maximize intersectoral action in support of them;
  — assist policy- and decision-makers in planning, implementing, and evaluating programmes;
  — encourage the research needed to improve and fill gaps in professional knowledge.

1.6 Key themes of the report

In preparation for the Expert Committee meeting, WHO asked various experts to write papers relating to the promotion of health in schools. Such papers were requested from WHO staff in Geneva and Regional Offices and from experts from other agencies, academic institutions, and nongovernmental organizations.

About 30 such background papers, including examples from both developing and developed nations, were prepared on a wide range of subjects (authors and titles are listed in the Acknowledgements). These papers were synthesized into three working papers: *The status of school health, Improving school health programmes: barriers and strategies to improve school health, Research to improve implementation and effectiveness of school health programmes* (available on request from Health Education and Health Promotion, World Health Organization, 1211 Geneva 27, Switzerland).

The three working papers were used by the Expert Committee, as it prepared its report, to identify the best examples from both research and experience worldwide that would address the following questions:

- How can schools adapt to a changing environment and to the health and educational needs of students and staff?

- What are the critical building blocks that are necessary if a school is truly to promote health?

- Is a new framework needed to guide the process of health promotion?

- What arguments can be made to convince policy-makers of the educational, health, economic, social, and political benefits of investing in school health programmes?
- What evidence of effectiveness exists to guide the selection of strategies that have the potential to improve the health of school-age children, their families, and school staff?
- Which particular strategies are necessary to implement, advance, and institutionalize school health programmes?

These questions are interrelated. Rather than being addressed independently, they are the context of and concerns underlying this report.

2. Trends in school health

2.1 Introduction

More than half of the world's population is below the age of 25 years; 29% are between 10 and 25 years of age, of which 80% live in developing countries. In 1990, young people under the age of 25 years constituted 64% of the population of Africa, 57% of that of South Asia, and 56% of that of Latin America (*19*). By the year 2001, there will be 2 billion teenagers on the planet, more than there have ever been in history. These young people live mostly in Africa, Asia, and Latin America (*20*). In an era of increasing technological access and rapid technological innovation, the potential of this population is unbounded. However, if we fail to nurture their health, their hopes, and their skills, their destabilizing effect on the political, social, and economic systems could be immense.

The condition of today's young people

While children's health has improved steadily over the past several decades, today's changing social and political conditions, local and global economic decline, and growing marginalization of the poorest communities and countries affect the ability of millions of young people in every region to achieve their physical and mental potential, complete school, find work, and become well adjusted, economically productive, and socially responsible adults who can contribute to the growth of their communities and nations (*1*). Children who in the past would have died in infancy are surviving into childhood, adolescence, and adulthood, with, however, multiple threats and impairments to their physical, mental, and social health.

The future of today's young people

- By the year 2000, 30–40 million people will have been infected with HIV.
- Tobacco accounts for 3 million premature deaths per year, contributing to rapidly rising health care costs (*21*). Unless smoking behaviour changes, three decades from now the number of premature deaths in the developing world that will be caused by tobacco will exceed the combined number of expected deaths from AIDS, tuberculosis, and the complications of childbirth.
- Numerous microbes have become drug resistant, causing a resurgence of tuberculosis, malaria, and some forms of sexually transmitted diseases. The role of prevention is and will remain predominant (*22*).

The health and education of girls are of special concern. Worldwide, girls face continued discrimination, increasing violence, and preventable ill-health. In developing countries there has been a steady rise in overall school attendance: from 1960 to 1990, the percentage of boys between 12 and 17 years of age enrolled in school increased from 43% to 53%; that of girls from 26% to 42%. Yet 60% of school-age children worldwide who do not attend school are girls. Even where education is available, many girls are absent for economic, cultural, or religious reasons, or because of early marriage or household responsibilities (e.g. caring for relatives) (*1*).

Improvements to girls' health will improve women's health, and in turn dramatically improve the health of their children and families. Educated girls are healthier; when they become mothers they are better able to care for their children. Education generally results in a later first pregnancy, which typically means a safer pregnancy. Educated girls and women seek prenatal care earlier, give birth to healthier babies, and bring them home to healthier environments. As detailed in the following, education strengthens women's ability to create healthy households, increases their ability to benefit from health information and to make good use of health services, and increases their access to income and healthier lives (*2*, *22*):

- Surveys in 25 developing countries show that 1–3 years of maternal schooling reduces child mortality by about 15%.
- Many national reports state that the more years of education a female receives, the more likely it is that her children will survive the first 5 years of life.
- Data from 13 African countries show that between 1975 and 1985 a 10% increase in female literacy rates was accompanied by a 10% reduction in child death rates.

- In Peru, 7 or more years of schooling for girls reduced their children's mortality risk by 75%.

However, although in some developed countries gains in sex equality are evident, the major reason girls drop out of school continues to be unintended pregnancy.

2.2 The role of schools

Since the school years are a formative time in the development of a human being, the school setting provides an efficient means of improving young people's health, self-esteem, life skills (abilities related to effective decision-making, communication, understanding emotions, critical thinking, coping with stress, etc.), and behaviour. In addition to providing a site where interventions against many specific diseases can efficiently and economically be implemented, schools can also provide the setting to introduce health information and technologies to the community and can lead the community by advocating policies and services that promote health.

School health programmes delivered through health-promoting schools can address many of the major challenges to health throughout the world. These include HIV/AIDS and sexually transmitted diseases; violence and injury; unintended pregnancy and poor reproductive health; helminth infections; poor nutrition and food safety; poor sanitation and water control; lack of immunization; poor oral health; malaria; respiratory infections; psychological problems; problems associated with the lack of physical exercise; and alcohol, tobacco, and illicit drug use.

School health programmes that coordinate the delivery of education and health services and promote a healthy environment could become one of the most efficient means available for almost every nation in the world to improve significantly the well-being of its people. Consequently, such programmes could become a critical means of improving the condition of humankind globally. However, school health programmes are underdeveloped in practically every nation. Scant resources — money, time, qualified professionals, public and political will, supplies — plague school health programmes worldwide.

Unfortunately, the concept of a comprehensive approach to school health programmes, or of a "health-promoting school", is more advanced than its practice. While terminology and definitions may differ, most of the world's countries recognize and address three areas of school health programmes — health services, health education, and a healthy environment. However, the responsibility for these activities seldom rests with a single institution. In recent years, many countries

have attempted to organize the planning and development of these traditional areas, as well as other related areas, into a more integrated approach to school health programmes.

2.3 School health programmes: a definition

The definition of school health and more particularly school health programmes has evolved markedly in the last 40 years. Although traditionally school health programmes were defined as encompassing school health education, school health services, and a healthy school environment (which included both the physical and psychosocial aspects of environment), neither the interrelationships among these elements nor the manner in which they can and should reinforce each other was emphasized, either in theory or in practice.

In the late 1980s, the definition of school health programmes was elaborated in response to the changing roles of and changing responsibilities within schools. The following eight specific components of school health programmes were identified (*23*):

- school health services
- school health education
- school health environment (physical and psychosocial)
- health promotion for school personnel
- school-community projects and outreach
- nutrition and food safety
- physical education and recreation
- mental health, counselling, and social supports.

This revised definition served as the basis for a comprehensive approach to school health. Health and education professionals began to realize that successful health promotion through schools is not the result of the success of these components individually; it is a reflection of an organized, coherent approach to a wide range of health issues, implemented through comprehensive and holistic strategies. Schools that approached health in this manner began to be called "health-promoting schools".

During the past decade, the following three strands of thought have come together that can further refine the concept of school health programmes — and set the stage to advance their development, implementation, and success:

- school health programmes must be founded on organized and mutually reinforcing components;

- schools are dynamic organizations that can respond to changing needs and environments;
- successful health promotion programmes are built upon five areas: policy, supportive environments, community action, personal skills development, and a reorientation of health services.

At this stage, there is a need to unite the best of current theory and practice in a flexible definition of school health programmes that emphasizes the relationships among and within programme components. Therefore, school health programmes are defined with respect to environment, services, and education. Within each area, several implications of the concept of comprehensive school health programmes are elaborated.

Environment

The school health environment should consist of:

- a physical, psychological, and social environment that is developmentally oriented and culturally appropriate, and that enables students to achieve their potential;
- a healthy organizational culture within the school;
- productive interaction between the school and the community of which it is a part.

Services

School health services should include:

- preventive, curative, and referral services (established referral networks extending beyond the school are essential);
- nutritional and food safety services;
- counselling, psychological, and social services;
- safe water and sanitation services;
- health promotion services for staff.

Education

School health education should include:

- academic skills and knowledge development (that make full use of a range of pedagogical techniques, including active learning, peer education, and inquiry-based learning);
- health and nutrition education;

- life skills education;
- staff education through training and development of school personnel.

This definition of school health programmes is designed to provide guidance to policy-makers, planners, educators, and health professionals. In practice, however, it must be recognized that each country and school has its own unique strengths and constraints. Consequently, each school should begin building its programme from its point of strength.

It should be noted that the definition comprises components of school health programmes and does not specify individual roles and responsibilities within the school system. For example, health education could be provided by a teacher or by other health professionals. Health education could take place in a class for health education or could be integrated across the entire curriculum. Moreover, although provision of safe water and sanitation are services, they are also essential elements of a healthy environment. The definition is therefore flexible and designed to be readily adapted to differing circumstances.

However, it is a fundamental truth of both health and education that neither is possible if the environment is so compromised that it presents risks instead of opportunities. To take one example, at the present stage in history, considering the state of development and available technology, the Expert Committee strongly believes that a functioning latrine is a fundamental condition for a school, without which it is difficult to conceive of either health or education being achieved.

2.4 The current status of knowledge concerning school health

A complete assessment and description of the environment, services, and education that affect school health conditions worldwide is unavailable. Descriptive literature on school health programmes is largely inadequate and focused on interventions directed at individual problems. In its geographical scope, the literature is extremely uneven, with far more information available for Europe, the USA, and Canada than for other regions and countries of the world.

2.5 Rationale for investment in school health programmes

Given the lack of knowledge about the state of school health throughout the world, it is reasonable to ask whether increased investment in school health programmes is justified. The Expert Committee wishes to stress that the answer to this must be affirmative, for the reasons detailed below.

School health programmes can be the most efficient and cost-effective way to improve students' health and, as a result, their academic performance. Thus for the student, school staff, the school as an institution, the family, community, and the nation, health promotion through schools is financially, educationally, socially, and politically desirable.

There is ample evidence that school health expenditures result in substantial savings:

- A study in the USA estimated that every US$ 1.00 invested in schools on effective tobacco education saves US$ 18.80 in the costs of addressing health and non-health problems caused by smoking. The study further estimated that the benefit of every US$ 1.00 spent on education for alcohol and other drug abuse prevention saves US$ 5.69. Furthermore, each US$ 1.00 spent on education to prevent early and unprotected sexual behaviour saves US$ 5.10. On average, the money saved by society for each US$ 1.00 spent on these three forms of health education is approximately US$ 14 (*24*).
- Spending money on school health programmes can be justified on purely economic grounds; schooling pays off in higher incomes and a healthier workforce (*22*).
- A 1993 World Bank analysis (*22*) determined that most regions of the world could greatly benefit by implementing an "essential public health package" consisting of the following five central elements:
  - an expanded programme on immunization;
  - school health programmes to treat worm infections and micronutrient deficiencies and to provide health education;
  - programmes to increase public knowledge about family planning and nutrition, about self-care or indications for seeking care, and about vector control and disease surveillance activities;
  - programmes to reduce consumption of tobacco, alcohol, and other drugs;
  - AIDS-prevention programmes with a strong component on other sexually transmitted diseases.

Although school health programmes are explicitly mentioned in only one of the above elements, for a large portion of the world's population, schools could efficiently provide all five elements of the recommended package.

There is ample evidence that better health improves academic performance:

Throughout the world, there are many examples of the school-based treatment of medical problems resulting in improved academic

performance. In one, Jamaican children who were treated for moderate whipworm infections raised their test scores, which had lagged by 15%, up to the level of uninfected children (*22*). School food programmes also have a marked effect on attendance and school performance (*6*).

There is ample evidence that school-based programmes can reach very large populations of school-age children:

- Schools can reach about one billion students worldwide and, through them, their families and communities. As previously noted, "the formal education system is . . . the developing world's broadest and deepest channel for putting information at the disposal of its citizens" (*3*).
- School health programmes have improved the health of large populations when implemented on a national scale. In the Republic of Korea, for example, the prevalence of intestinal helminths among children was reduced from 80% to 0.2% over 30 years through a school–community chemotherapy, health education, and sanitation programme.
- Teachers can have an immense impact on young people's health. As reported by UNESCO, there are almost 43 million teachers around the world at the primary and secondary levels (23.9, primary; 18.8, secondary) (*2*). The size alone of the teacher population is of public health significance.

There is ample evidence that health education and services have far-reaching effects:

- Studies in the USA have documented that carefully designed and implemented comprehensive health education curricula can prevent certain adverse behaviour, including tobacco use, illicit drug use, dietary practices that cause disease, unsafe sexual behaviour, and physical inactivity. Further, such curricula reduce school absences by reducing the impact of disease and drug and alcohol abuse, and the number of injuries and unintended pregnancies; they also improve cognitive performance through proper diet, exercise, sleep, and stress reduction (*25–34*).
- Healthy habits learned during early years (e.g. safe food handling) will be applied throughout life (*35*).
- School-based clinics show evidence of improving students' knowledge about how to be effective consumers of health services, reducing substance abuse, and lowering hospitalization rates (*36–38*).
- Health promotion for school staff, one of the least visible elements of school health programmes but one of the most critical, can decrease

teachers' absenteeism and improve their morale and the quality of classroom instruction (*39–42*). One programme for school staff in the USA demonstrated reductions in body weight, resting pulse rate, serum cholesterol level, and blood pressure (*43*).

- A review of 35 evaluated studies of sexuality and HIV/AIDS education in schools found that the provision of sex education, including the provision of contraception, does not increase the initiation of sexual activity among young people. It shows that sex and HIV/AIDS education may delay the initiation of sexual intercourse, decrease sexual activity, and increase the adoption of safer sexual practices among sexually active young people (*44*).

Thus, the benefits of school health programmes can accrue throughout society:

- For the student, benefits include enhanced physical, psychological, and social well-being and the ability to take full advantage of every opportunity for education.
- For school staff, benefits include improved morale and the ability to carry out their mission more effectively and improve their own health.
- For the family and community, both health and economic capacity can be increased.
- For the school and health systems, the efficient use of scarce resources can be maximized and waste reduced.
- For the nation, healthier and better educated men and women can provide a stronger basis for economic development.
- For the world, progress can be made to guarantee fundamental human rights as elaborated in the Universal Declaration of Human Rights, the Convention on the Rights of the Child, and other documents.

2.6 Strategic planning of school health programmes — from problems to action

The reality of school health programmes lags behind the vision of their potential. The existence of school health programmes is more an exception than the rule in developing as well as developed countries. This section describes a framework, recommended by the Expert Committee, that can be used for strategic planning to develop school health programmes and create health-promoting schools.

Published research on how schools change and accommodate innovation provides convincing evidence that producing change in schools

and communities is a long, necessarily local, and evolutionary process that must involve the entire system. So-called "quick fixes" do not work; the implementation and institutionalization of reforms often take 20 years. According to a new international study of the process of change in educational reform, successful reform has three main ingredients:

- a well planned and evolving national commitment, made concrete through appropriate management practices and institutional support, sustained over at least 10 years;
- strong local capacity;
- coherent linkages between central, district, and local school levels, by means of information, assistance, pressure, and rewards (*45*).

The five strategies described below call attention to critical areas for action in strengthening school health programmes. They are based on the Ottawa Charter for Health Promotion (*17*), sound theory, and the experience of health professionals and educators around the world.

The strategies are:

- To promote public policies for school health that provide resources for and embody a commitment to enhanced health and education.
- To foster supportive environments that are the result of assessment and improvement of the physical and psychosocial environment of the school.
- To encourage community action that supports the process of health promotion and the linkages between the school and other relevant institutions.
- To promote personal skills development (through both curriculum and the teaching and learning process) that emphasizes specific health-related behaviour, as well as the skills needed to support health throughout life.
- To reorient health services — in the school and the community — so that they:
  - provide enhanced access to services within the school as well as referral to the external health system;
  - identify and implement specific health interventions that are best carried out through the school;
  - integrate curative and preventive interventions.

These are not discrete strategies of change that can be adopted individually. Nor are they the ordered steps of a prescribed sequence of actions. Rather they are strategies of an integrated, mutually reinforc-

ing, and holistic framework for change. How can this framework be used to identify key activities to be undertaken in addressing health problems through schools? The examples of HIV/AIDS, poor nutrition and food safety, tobacco use, psychological problems, and malaria will be considered individually to answer this question.

2.6.1 *HIV/AIDS*

Policies are needed to ensure that discrimination does not take place in school against students or teachers who have AIDS or are infected with HIV, as well as to make information about AIDS prevention available to students, staff, families, and members of the community.

A supportive environment could include:

- social support, including counselling, for teachers or students who have AIDS or are infected with HIV;
- a climate in which information about AIDS prevention is readily available for all, both publicly and confidentially;
- changes around the school, for example action to remove drug dealers, as hypodermic syringes can help transmit HIV.

Community action can contribute to AIDS prevention by helping to disseminate factual information about HIV/AIDS and demonstrating support for AIDS-prevention activities and empathy for those who have AIDS or are infected with HIV.

Personal skills development can help young people and staff to acquire the knowledge, attitudes, and skills essential for AIDS prevention, including the negotiating skills with which to avoid high-risk behaviour, through lessons that are appropriate for their age and/or social circumstances.

Health services can be reoriented to focus on prevention, as well as treatment, and to provide confidential counselling and testing when necessary.

2.6.2 *Nutrition and food safety*

Policies are needed at the school level (integrated with national food and nutrition policies) to support and provide resources for programmes to supplement nutrition, rectify micronutrient deficiencies, and ensure that appropriate food safety practices are followed.

A supportive environment could include providing places for the safe storage and consumption of food and ensuring that if food is available in the school it is both nutritious and safe.

Community action can support and advocate school feeding programmes.

Personal skills can be developed through the provision of appropriate information on adequate nutrition and food safety to students, staff (including cooks), parents, and health workers.

Health services can be reoriented to make use of the school as a cost-effective site for providing micronutrient supplements and anthelminthic drugs.

2.6.3 *Tobacco use*

Schools can advocate *policies* that prohibit the sale of tobacco products to children and adolescents. Within schools, there can be policies prohibiting the use of tobacco products by students, staff, administrators, and visitors.

A supportive environment is a no-smoking, no-tobacco-use environment that counteracts, through its culture and norms, the strong social and media-driven pressures to use tobacco products.

Community action can seek to ensure that tobacco products are not available to students, especially near schools.

Personal skills development can help young people and staff acquire those life skills (such as effective decision-making, critical thinking, and coping with stress) that are specifically related to avoiding the use of tobacco.

A reorientation of health services can play a critical role in preventing tobacco use, by supporting relevant activities within the school, but such services can also provide advocacy within the community and at the national level for strong anti-tobacco policies and enforcement.

2.6.4 *Psychological problems*

Policies are needed to enable school staff to contribute positively to the psychosocial development of students and create opportunities for parents and teachers to work together to address psychosocial needs and problems. Policies are also needed to encourage the training of school staff to recognize psychological problems and make appropriate referrals to agencies outside the school.

A supportive environment is one where students are encouraged to explore new knowledge and try out new skills without fear of being bullied or punished if they have difficulties or make mistakes.

Community action is required to ensure that schools' efforts are supported by the local community. Isolated efforts to address psychoso-

cial issues in schools alone are easily undermined if the norms and practices established in the school environment are not extended to the local community and family life.

Personal skills development can help young people acquire and practise life skills that enable them to deal effectively with the psychological demands and challenges of everyday life.

A reorientation of health services can support schools' efforts to promote psychosocial well-being as a strategy for the primary prevention of physical, mental, and social health problems.

2.6.5 *Malaria*

Policies are needed that permit treatment of affected students and staff through schools. Policies are also important for determining how the absences of students and staff due to episodes of the disease will be administratively handled.

A supportive environment recognizes that the functioning of affected students (and staff) will be reduced during disease episodes and that they should not be penalized but assisted in maintaining their programmes of study.

Community action can ensure that mosquito-control campaigns are improved and extended where necessary and maintained where they have been successful.

Personal skills development can foster an understanding of the way in which malaria is transmitted as well as such skills as using mosquito netting and preventing stagnant water pools from forming near the home or school.

Community health services can be reoriented to emphasize prevention as well as to promote close cooperation with the school as a site for the initial recognition and treatment of affected individuals.

2.6.6 *Summary*

The examples of HIV/AIDS, nutrition and food safety, tobacco use, psychological problems, and malaria indicate how the five strategies can be used as a framework for planning. It is important to note that specifics will vary from school to school and nation to nation.

The essential point is that school health programmes must be integrated and comprehensive in order to achieve the greatest benefit for young people's health and education. Considering the examples above, it is clear that the type of activity required to address one problem is often the same as or similar to that needed to address

others. Thus, policies that are designed to ensure non-discrimination against students and staff affected by HIV/AIDS should be drawn broadly, so as to prevent other forms of discrimination as well. In personal skills development, the concept of life skills education is present in many examples, as adequate life skills are critical to lifelong health and well-being. Furthermore, a major focus of the reorientation of health services in each example is the provision of preventive as well as curative services.

2.7 Challenges to achieving the vision of school health programmes

In a rapidly changing technological and social environment, countries around the globe need first and foremost to develop their human potential. Schools present an opportunity to work through one of the most organized and powerful systems in society to influence the health and well-being of those who come in contact with it.

This review of school health reveals that there has been extensive research on and a vast body of experience with individual components of school health programmes, and with isolated diseases and strategies for treating them.

The Expert Committee's vision of the future of school health programmes, however, is one in which schools around the globe place healthy human development at the core of their mission and use all their resources to achieve that goal. The Expert Committee urges all people to imagine a world where schools accept the challenge to experiment with new ways to coordinate the three components of school health programmes — education, environment, and services — in order to enhance the teaching and learning process and improve educational achievement and productivity.

What are the challenges ahead for school systems that embrace this vision — challenges with respect to policies, programmes, and practice — and mobilize their resources to implement the best that theory and practice can provide? The challenges are represented by the following questions:

- How can policy-makers and politicians be convinced that implementing a vision of the school as a system to promote learning, health, and development is the most cost-effective way to organize and use resources?
- How can more school systems be enabled to implement the best teaching and learning practice and make use of its profound effect on healthy development?

- Who should take the lead — the education or the health sector, and for which actions? What other sectors should be involved? Which should manage and coordinate the initiative?
- What mechanisms, processes, and criteria will be used for setting priorities? For example, which components need strengthening? Which methods and strategies are effective? Which direction of reform is best: from the school to the community or from the community to the school?
- How can existing resources be deployed in order to maximize the use of systems currently in place? What other resources are needed? Whose responsibility is it to provide them?
- What capacities and competences — in leadership, management, or coordination — need to be strengthened among policy-makers, administrators, teachers, health practitioners, and others to realize this vision of school health programmes? Since teachers play an essential role in the school system, how can they learn to think differently about their roles and apply new concepts and skills? How can they be effectively supported as they gain experience? What are the roles of providers of higher education and continuing education?
- As schools necessarily exist within particular political, economic, and cultural contexts, what role is it desirable or feasible for them to take in advocating best practice? What risks are schools willing to take in the face of controversy and debate? How can they gain the support of other social institutions in the process?
- How can school health programmes address the needs of students whose physical or psychological health is different from that of the majority, as a result of disability or chronic disease?

These and other challenges are inevitable in the process of change but essential to understand and address if the vision of school health programmes is to be realized. Schools around the globe must take steps so that children are more actively engaged in the learning process, teachers learn new concepts and skills, and both teachers and children are equipped to care for their own health. If more elements of a school system can be dedicated to healthy human development, there will be many positive benefits for both schools and society.

However, barriers exist that must be overcome if these challenges are to be faced and the potential of school health programmes is to be achieved. Perhaps the most important challenge is to identify strategies at every level (international, national, and local) that can serve to strengthen and improve school health programmes around the world. These strategies are discussed in section 3.

3. Strengthening school health programmes at the international, national, and local levels

Poverty and declining economic conditions are becoming more common worldwide and present an increasing barrier to the allocation of resources to health and education, which already have to compete with other sectors of public expenditure. Further, these worsening economic conditions have resulted in changes within educational systems that emphasize the preparation of young people for jobs and the roles of workers and producers rather than for their healthy development as citizens and human beings. Moreover, teachers, who play a key role in the health and education of their students, often feel overburdened and undervalued. In some countries, their salaries are grossly inadequate and in others they may wait as long as 2 or 3 months to be paid.

Barriers to improving school health programmes are found at every level — international, national, and local. However, strategies can be used to overcome these barriers. This section of the report discusses barriers common to all levels, as well as barriers specific to various levels. General strategies are described for overcoming these barriers and improving and strengthening school health programmes. Specific examples are then offered of strategies at the local, national, and international levels.

3.1 Organizational levels involved in school health

At three different levels, organizations exist whose activities and collaboration are essential for improving school health programmes. Such organizations can work across levels to address common barriers or implement strategies specific to their level.

At the international level, relevant organizations include:

- international organizations at the global level (e.g. headquarters of WHO, UNICEF, UNESCO); nongovernmental agencies at the global level (e.g. Education International, International Committee of the Red Cross, Rotary International, International Union for Health Promotion and Education);
- international organizations at the regional level (e.g. WHO Regional Offices, the Council of Europe, regional counterparts of other global organizations).

At the national level, organizations include:

- national governmental agencies such as ministries of health and education;

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- national nongovernmental agencies like teachers' unions and parent–teacher associations.

At the local level, organizations include:

- provincial and state agencies
- district and county agencies
- individual schools.

3.2 Barriers common to all levels

Some common barriers to improving school health programmes that need be addressed across all levels are:

- inadequate vision and strategic planning;
- inadequate understanding and acceptance of school health programmes;
- inadequate collaboration and coordination among responsible parties;
- the lack of a sense of ownership of and responsibility and accountability for actions to improve school health programmes;
- the lack of resources (financial and human resources, materials, and organizational infrastructure).

3.2.1 *Inadequate vision and strategic planning*

A clear vision of the potential benefits of school health programmes and how they might be realized is vital. Such visions motivate people to develop and implement solutions and to start a difficult process and see it through to the end. However, once a vision has been articulated, careful strategic planning is required to make it real. A vision without a plan is only a dream, whereas a plan divorced from a vision is lifeless and mechanical. Neither can yield any lasting, positive result without the other.

3.2.2 *Inadequate understanding and acceptance*

The need for school health programmes and the new educational, medical, and environmental technologies which they involve are neither well understood nor supported by decision-makers in influential international, national, and local agencies, or by the public at large. Indeed, such programmes can awake controversy, inasmuch as they are intended not only to teach facts, but also to assist students, staff, parents, and members of the community to make specific changes in their behaviour. Even if it is agreed that such changes are worth while, they are often seen as secondary to other priorities.

3.2.3 *Inadequate collaboration and coordination*

Because health and education are closely linked, progress can occur only if the ministries of health and education, as well as their representatives at the provincial, district, and local levels collaborate. However, even this is not enough, as too often these are the least well funded and well staffed ministries. Furthermore, the ministries of planning, development, transport — as well as others — have interests, capacities, and responsibilities that can affect school health programmes. Additionally, since nongovernmental organizations have played important roles in improving the health and education of young people — and can become an even more important resource for doing so — their effective collaboration should be obtained.

3.2.4 *Lack of a sense of ownership, responsibility, and accountability*

Without a sense of ownership of a process of change, it is hard to convince participants to feel a sense of responsibility. Without a sense of responsibility, it is difficult to expect accountability. Without accountability, it is virtually impossible to know if success is being achieved or how to adapt what is being done. This relationship holds at every level and across levels. When national governments declare school health programmes to be the responsibility of schools, but do not give them the necessary resources, a barrier is created. When school principals and head teachers place the responsibility for change with teachers without allowing them to help determine the direction and processes for that change, a sense of ownership is lacking, and a barrier is created. Similarly, in intersectoral collaborations, when the roles of participants are poorly defined and no one feels a legitimate part of the process, a barrier is created.

3.2.5 *Lack of resources*

The provision of resources for the health and education of children and adolescents is often given a low priority, which undermines the achievement of educational and health outcomes. Too few teachers and school personnel are educated and trained in the broad concepts of school health programmes and have the skills to implement them. Materials for teaching about health, such as curriculum and training guides, are not available in many schools. Even minimum facilities for latrines and safe water are not available in many schools, a situation rendering both health and education impossible.

3.3 International-level barriers

At the international level, the following barriers are common:

- *Barriers that interfere with effective cooperation among United Nations or international organizations.* The strengths and mandates of international organizations such as WHO, UNESCO, and UNICEF both differ and overlap, which can result in competition that hinders cooperation. Moreover, ongoing means of collaboration do not exist with regard to school health programmes. Thus, collaboration among international agencies tends to be short term and limited in scale, and often fails to take full advantage of each organization's experience, capacities, and constituents.
- *Barriers that prevent governments from working together and learning from each other.* Many countries could learn from the policies and programmes developed in other countries. However, some national governments may believe that their circumstances are so unlike those of others that sharing their experiences would not be productive. Moreover, there are few mechanisms of collaboration that would provide governments with the opportunity to reflect on and define common issues and join together in learning from each other.
- *Barriers that make it difficult for countries to work with international agencies.* In many countries, there are few resources available for domestic school health programmes, which makes it difficult to advocate using resources for international collaborative efforts, or even for implementing methods and programmes promoted by international agencies.
- *Barriers that governments present to international agencies.* Changing political or governmental structures, as well as political and economic crises, may make it difficult for international agencies to engage in long-term planning and capacity building with government agencies.

3.4 National-level barriers

There are similarities between national-level barriers in both developing and developed countries:

- inadequate recognition on the part of health and education officials of the importance of health to education and of education to health;
- the absence of policies and resources in support of school health programmes;
- insufficient coordination among agencies concerned with health in schools;
- lack of trained and knowledgeable personnel to plan, manage, and evaluate school health programmes.

3.5 Local-level barriers

In both the developing and the developed world, many barriers are related to an incomplete understanding of school health programmes;

a lack of confidence to implement them; a fundamental resistance to change; the difficulty with which innovations are generally adopted; poor communication among school personnel, parents, and other members of the community; and issues of jurisdiction that can cause difficulty in planning coordinated efforts for change.

In addition, the following barriers exist in many developing countries:

- insufficient classrooms and furnishings;
- lack of safe water and sanitary facilities in schools;
- too few trained teachers or school personnel, as well as high turnover rates of staff;
- hazardous school buildings or grounds;
- unhealthy students and staff with low attendance rates;
- lack of health and other necessary services in the community;
- long distances to travel to school, often without food for breakfast;
- community resistance to certain topics and public demands that young people should receive only a "traditional" education (i.e. reading, writing, and arithmetic).

Recognizing a problem is the first step to overcoming it. A variety of important barriers has been identified. The next section therefore considers strategies through which these barriers can be overcome.

3.6 Strategies applicable at all levels

Such diverse fields as business, public health, education, and advertising offer a range of strategies for improving school health programmes. In some cases these strategies have been applied with great success. But a wider application is necessary at all levels in order to strengthen school health programmes.

At the core of any strategy is the concept of managing change. Changing the culture of institutions is the real objective, not implementing single innovations. Strategies for change in school health programmes need to take account of the school as a system and be applied in the context of the broader community and society.

What is required are radically different ways of looking at, responding to, and managing the process of change. One way to approach change is to make it everyone's responsibility: for school health programmes to be strengthened, many people within a school and the educational and health systems need to become agents of change. Through dia-

logue and shared planning and action, people can develop their own vision of the implications of school health programmes and tailor their actions to meet local conditions.

Six strategies can be applied to the international, national, and local levels:

- vision building and strategic planning
- advocacy
- networking and collaboration
- resource mobilization and allocation
- capacity building
- operations research.

3.6.1 *Vision building and strategic planning*

School health programmes cannot be created without both a vision of what they should be and a strategic plan that details how to make that vision real. Even when a vision is clear, it must be effectively and continuously communicated to — and accepted by — the many agencies and professionals who can collaborate to implement it. Further, to ensure that various agencies are committed to achieving a vision, they should be involved in conceiving it. Developing a vision and planning strategically to implement it also involve the other strategies discussed below.

3.6.2 *Advocacy*

Advocacy is a strategy for improving policies related to school health and increasing the level of commitment to and resources available for school health programmes. It is required at every level and can be carried out by anyone who is committed to and familiar with school health programmes. It involves the synthesis and direct, simple presentation of information derived from experts concerning the critical linkage between health and education, and the way in which school health programmes can benefit students, staff, families, communities, and countries. Advocacy can emphasize the different aspects of school health programmes that respond to the concerns of different audiences and can help convince legislators and policy-makers to develop legislation and policies that support school health programmes as well as to allocate resources to them. The broad dissemination of expert opinion and the results of research can have a powerful impact on the priorities and work of institutions and agencies.

3.6.3 *Networking and collaboration*

Effective advocacy can muster support for a vision and strategy and elevate school health to a place of priority among social concerns. However, moving from concern to action requires the networking and collaboration of interested people. It also requires the cooperation of people who can implement change. At every level, therefore, competent, responsible, and accountable individuals need to be identified. It is as important for local experience and expertise to inform national-level activities as it is for national-level activities to support the development of school health programmes on the local level. This only happens when people share information and can influence each other's work.

Formal networks can also be an effective means of sharing information and engaging in joint problem solving. Networks promote the development of the technical, managerial, and financial aspects of school health programmes and facilitate the informal exchange of ideas, experience, and educational materials at the international, national, and local levels. Such networks can take many different forms and use different approaches: consultative meetings, newsletters, conferences, exchange visits, exchange of materials, and peer evaluations. They should involve everyone with an interest in improving school health, including health and education professionals, administrators, policy-makers, students, families, and community members. Both individuals and institutions can be involved and can contribute to:

- diffusion of new knowledge, strategies, interventions, and research;
- motivating people to implement innovations;
- sharing of knowledge and experience;
- advocacy for school health;
- improving the technical components of school health programmes.

3.6.4 *Resource mobilization and allocation*

Because of limited financial resources, many planners and school authorities consider school health activities to be an extra and unnecessary budgetary burden. It is therefore important for nations, states/provinces, and local communities to develop policies and mechanisms that ensure financial support for school health programmes. Multisource funding for school health programmes is necessary because the responsibilities and actions they entail are often complex and fall under the purview of various agencies. In addition to primary funding through the budgets of the ministries of health and education, district

and local governments, and other governmental sources, a number of other sources of funding can be investigated:

- the community;
- income-generating activities in the school, such as the production and sale of meals;
- private enterprises;
- international agencies.

As a part of strategic planning, a mechanism for funding that involves various sectors and agencies should be built into a school health programme so as to ensure steady, long-term support. Multisource funding helps to ensure long-term support for school health programmes, as it increases the number of interested parties.

3.6.5 *Capacity building*

Capacity-building strategies are strategies to help both individuals (educators, teachers, and health workers) and institutions (schools, governments, and local nongovernmental organizations) acquire the information, skills, and resources necessary for the effective implementation of school health programmes.

Capacity-building strategies also help create environments conducive to health. They include such things as pre-service and in-service training for teachers, training follow-up support, and infrastructure development to plan, implement, monitor, and evaluate school health programmes. As in the other strategies discussed here, capacity building requires collaboration among many individuals and institutions. For instance, secondary schools can help prepare students who wish to become teachers, and college and university teacher education programmes can provide the pre-service training that will help teachers integrate health promotion into their professional activities. Universities, government statistical offices, and international agencies can help both to develop data collection methods and to train practitioners and community members in using data to improve school health.

3.6.6 *Operations research*

Once school health programmes have been developed and resources have been mobilized, the manner in which each programme is implemented and the outcomes it achieves need to be documented. If a programme is successful, it is important to know how to continue and replicate it elsewhere. If it is not successful, it is important to try to

understand which elements need to be changed in order to make the appropriate corrections. This is the role of operations research. By collecting data before, during, and after programme implementation and by comparing the results of similar programmes in different places, it is possible to identify the strategies that are most cost-effective.

3.7 International-level strategies

The strategies discussed in this section are examples of ways in which international organizations are overcoming problems they face in efforts to improve school health, and are drawn from the experience of United Nations agencies and nongovernmental organizations. Strategic actions at the international level are important because they support both national- and local-level strategies. International-level strategies described below include infrastructure development, advocacy, social support, and empowerment.

3.7.1 *Infrastructure development*

International organizations need the appropriate infrastructure to draw upon the full potential of their own organizational resources as well as to work with other organizations. Working groups can provide the infrastructure necessary for coordinating actions both within and between organizations.

Intra-organizational working group

Many WHO programmes have the capacity to provide technical support for a wide range of health-promotion, health-education, disease-and-injury-prevention, health-care, mental-health, and environmental health interventions in schools. Furthermore, the support of many WHO programmes is needed to foster integrated and comprehensive approaches to school health, and to provide leadership in launching a successful initiative to improve school health programmes worldwide.

WHO accordingly established the Working Group on School Health to bring together all organizational units concerned with schools and school health to:

- assist in the formulation of priorities for international, regional, national, and community actions to improve school health;
- improve collaboration and support among international, regional, national, and community agencies to improve school health;
- strengthen international, national, and community capacities to plan, implement, and evaluate school health programmes.

Inter-organizational working group

In 1993, Education International (a trade secretariat representing more than 18 million education professionals) and WHO agreed to work together in support of school health programmes. Education International and WHO established an inter-organizational working group made up of organizations committed to improving school health programmes, including UNESCO, the Education Development Center (a not-for-profit, nongovernmental organization in the United States), the National Education Association (one of the largest teachers' unions in the United States), the Netherlands Institute for Health Promotion and Disease Prevention, and the Centers for Disease Control and Prevention in the United States.

These organizations have since been meeting regularly, with WHO and Education International sharing the role of secretariat of the working group. Each organization contributes its own resources and experience and participates in planning, implementing, and evaluating the group's actions. In 1994, the group surveyed Education International's member organizations to determine the extent to which they supported school health programmes, as well as the prevention of HIV infection and the discrimination surrounding it. In 1995, the group convened the Global Conference on School Health and HIV/AIDS Prevention for over 300 leaders of Education International's member organizations. The conference focused on ways these organizations could use their capacities to strengthen HIV-related school health policies, curricula, and training programmes. In 1996, the group will begin to offer a series of regional workshops that will present materials to help teachers' unions participate as full partners with their respective ministries of health and education in developing school health plans and programmes related to HIV infection.[1]

The inter-organizational working group has provided a means by which its members could achieve a level of coordination and impact that would not have been possible through the organizations' individual efforts.

3.7.2 *Advocacy*

WHO works through its Working Group on School Health and its Regional Offices to consolidate expert opinion about the nature and scope, effectiveness, and potential of school health programmes and

[1] *Note added in proof*: A workshop was held in 1996 in Latin America; a similar meeting was convened in Asia in 1997.

health-promoting schools and to develop arguments that can help individuals and groups make a case for increased investment in school health programmes. Such arguments are also useful for decision-makers, who must justify decisions to increase support for school health programmes.

UNICEF advocates school health programmes through generating commitment and mobilizing technical and societal resources in support of the relevant goals and standards for children's health and education.

UNESCO plays an important advocacy role by assisting policy-makers, administrators, teachers, students, and other people concerned with or engaged in education, nutrition, and preventive and health education. UNESCO promotes actions to raise awareness of school health issues, using innovative approaches adapted to the sociocultural context of various countries, such as preventive education through the media.

3.7.3 *Social support*

WHO's social support strategies are aimed at mobilizing organizational resources in support of school health programmes. This involves identifying organizations with the constituents and capacity to strengthen school health programmes, establishing alliances and networks among them, and fostering collaborative or complementary actions to strengthen school health programmes. WHO Networks of Health Promoting Schools are large-scale examples of strategies to develop international, national, and local support for school health programmes.

Through its strong field presence, UNICEF helps build grass-roots support for implementing programmes to improve the health and well-being of young people.

UNESCO promotes the use of educational materials that can be adapted to specific sociocultural contexts. It also carries out field assessments of child nutrition, health, and primary school participation to support the development of school health programmes.

3.7.4 *Empowerment*

WHO works through its Working Group on School Health and its Regional Offices to increase the knowledge, skills, and technical capacity of persons responsible for school health programmes in national ministries and other relevant organizations. WHO works with

such individuals in selected countries to help them obtain technical and financial support for strengthening school health programmes. WHO collaborates actively with other organizations to foster increased interest and investment in school health and to develop leadership skills for strengthening school health programmes and helping schools become health promoting.

UNICEF's School-Based Interventions Technical Support Group is an example of an effort to empower educators and health workers to implement feasible activities that are likely to have rapid and measurable results, that are possible to implement on a large scale, and that can contribute to the health and development of young people. To accelerate the implementation of programmes at the national level, UNICEF draws on the experience of representatives from selected country programmes, as well as key organizational and technical partners such as WHO and UNESCO. For example, UNICEF works closely with WHO to develop means of enhancing life-skills education and works through the Technical Support Group to consider ways of improving the health and learning capacity of school-age children (e.g. providing micronutrients, anthelminthics, and safe water and sanitation), creating links with health services and organizations outside schools (e.g. school health clubs), and exploring the potential role that schools can play as community resources for improving the health and development of young people.

UNESCO empowers health and education professionals to act by working with them to collect data on which effective programmes can be based. By drawing on its resources in education, social and human sciences, natural sciences, culture, and communication, UNESCO assists in the creation of multisectoral, multidisciplinary programmes. Empowerment of health and education professionals is also fostered by framing social and economic development in equitable and sustainable terms that promote the value of the individual.

3.8 National-level strategies

At the national level, the strategies that can improve school health programmes include the following: establishing formal collaboration between the ministries of health and education; active health surveillance to establish priorities for action; providing support, through both resources and technical assistance, to local school districts and schools; and establishing the means by which governmental and nongovernmental organizations can coordinate their efforts.

The Expert Committee recommended that those pursuing strategies to improve school health programmes at the national level should:

- identify the responsible organizational staff and unit;
- develop a strategic plan;
- implement activities to achieve the plan's objectives;
- monitor achievement of objectives and modify the plan as necessary;
- establish an intra-organizational working group, as appropriate;
- establish an inter-organizational working group of all concerned parties.

From the following examples from both developed and developing countries, it can be seen that the means of implementing these strategies can be adapted to other countries. These examples require varying levels of resources.

3.8.1 *Antigua*

Some 4000 students have taken part in an intersectoral programme for the development of healthy lifestyles. The project, sponsored by the Ministries of Health and Education, with the support of local nongovernmental organizations, parents, and community leaders, aimed to enhance students' capability to develop and maintain a healthy lifestyle and to monitor their individual progress in so doing. The lifestyle that students were encouraged to adopt included regular weighing, daily physical exercise, proper nutrition, and maintenance of a positive self-concept.

3.8.2 *Bahrain*

Bahrain's comprehensive school health education programme aims to help primary-school-age children develop self-reliance, problem-solving skills, and practices that will sustain their own health and well-being, as well as that of their families and communities. In a decentralized programme of national collaboration, a multisectoral task force works to integrate health topics into other subjects taught in school. The task force also follows up programme implementation, prepares resource materials, and designs tools for monitoring and evaluation of the programme. The programme includes a teacher training component. All indicators of the programme, which started in 1989, show a highly significant improvement in the knowledge, attitudes, and behaviour of primary-school students with respect to most common diseases. The programme operates in 57% of primary schools in Bahrain. Moreover, almost all primary schools in Bahrain employ the WHO Regional Office for the Eastern Mediterranean's Action-oriented School Health Curriculum for Primary Schools (*46*), which includes 22 curriculum units and a teacher's guide. The programme in Bahrain is a model of collaboration between the ministries of health

and education, as well as ministries and departments in other sectors (*47*).

3.8.3 *Canada*

A comprehensive study of the health attitudes and behaviour of 11-, 13-, and 15-year-olds in Canada and 10 other countries has guided Canada's modifications of and improvements to the existing school health programme, as reported in *The health of Canada's youth: views and behaviours of 11-, 13- and 15-year-olds from 11 countries* (*48*) and *The health of youth: a cross-national survey* (*49*).

3.8.4 *The European Network of Health Promoting Schools: Bulgaria's experience*

The objectives of the Network — which is a joint project of the WHO Regional Office for Europe, the Council of Europe, and the Commission of the European Communities — are to include health education in school curricula at all instructional levels in member states; encourage cooperation among member states; and disseminate the results of projects demonstrating the applicability of specific interventions under programme conditions. Each participating member state agrees to support intersectoral cooperation between the education and health authorities and establishes a national coordinator and a national support centre for activities to support the development of health-promoting schools.

In each nation, approximately 10 health-promoting schools are selected to participate in the Network. In each school, a project team (and manager) are appointed to help the school:

- provide a health-promoting environment for both working and learning through its buildings, play areas, and catering facilities, including the establishment of appropriate safety regulations;
- promote individual, family, and community responsibility for health;
- encourage healthy lifestyles and present a range of realistic health choices for students and staff;
- enable students to fulfil their physical, psychological, and social potential and promote their self-esteem;
- establish clear aims for the promotion of the health and safety of the school community (both students and staff);
- foster good staff–student and student–student relationships and efficient linkage between the school, home, and community;
- exploit available community resources for the promotion of health through schools;

- plan a coherent health education curriculum using methods that actively engage students;
- equip students with the knowledge and skills needed both to make sound decisions about their health and to preserve and improve a safe and healthy physical environment;
- take a broad view of school health services as an educational resource that can help students become effective users of health care services.

The Network's efforts clearly foster the development of national-level strategies for school health promotion, as illustrated by the example of Bulgaria. In 1992, the Bulgarian Ministry of Education and Ministry of Health requested a consultation with the Secretariat of the European Network of Health Promoting Schools to discuss Bulgaria's possible entry into the Network. Bulgaria was undergoing rapid economic and social transitions. The education and school health service systems were in urgent need of reform, and school buildings needed repairs. Teacher training programmes and school curricula needed revision. Entry into the Network offered the opportunity to adopt at a national level a new concept of and approach to health education, and also a chance to interact with other Network participants in Europe.

As soon as an agreement was signed between the Ministries and the Network, a Bulgarian coordinator was selected for the Network; the existing National Centre for Health Promotion was designated the support centre for the Network; and a support team of educational psychologists and health professionals was established.

Together, the coordinator, support centre, and support team provided leadership, coordination, and technical input. They selected 10 schools for the Network on a competitive basis from among 68 schools. It was essential that these schools had demonstrated a commitment to and understanding of the aims of the Network. They also were required to have obtained approval for the project from their municipalities.

The 10 selected schools represented a spectrum of educational, social, and economic circumstances in Bulgaria. Some were located in mountain villages, some in small towns of less than 50000 people, and some in large cities. Because so many schools wanted to participate, a three-level system was created. Level 1 consisted of the 10 schools that became part of the Network. Level 2 consisted of the remaining 58 schools that were not chosen. These schools established a Bulgarian National Association of Health Promoting Schools and continued to work to develop school health programmes using the concept of health-promoting schools. Level 3 consisted of schools that wanted to

work on a specific issue, such as drug abuse, sex education, or healthy eating, but did not implement the full health-promoting school concept.

Funding has been and continues to be a problem. Frequent changes of government in Bulgaria have limited the continuity and motivation of the national support team. However, the Bulgarian National Association of Health Promoting Schools has been recognized by the Bulgarian Government for the leadership it has provided in improving school facilities, curricula, and teaching. Moreover, during its first 2 years of operation, the Bulgarian National Association of Health Promoting Schools has:

- developed good working relationships and communication with the Ministries of Health and Education;
- created a national steering group made up of senior education and health officials to advise the national support team on technical and bureaucratic matters and to offer political endorsement of new initiatives;
- organized regular workshops for teachers to upgrade their training in areas such as planning and evaluation, project management, and specific curriculum topics (e.g. sex education, crisis intervention);
- organized lectures on different aspects of the health-promoting school concept for parents, members of local communities, and journalists from the print, radio, and television media;
- negotiated with national teacher training institutions for the inclusion of health education theory in training courses;
- developed a relationship with other health-promoting school networks in neighbouring countries; many schools share their knowledge and experience by participating in Albanian and Romanian national workshops organized by colleagues within the European Network;
- placed the concept of health-promoting schools firmly on the political agenda in Bulgaria.

3.8.5 *India*

Research has shown that, for innovations in teaching methods to occur efficiently, teachers must feel, first and foremost, that the proposed changes address their own professional concerns (*50, 51*). In order to benefit from this finding, the Teacher Empowerment Project in the state of Madhya Pradesh, India, has initiated a series of seminars whereby teachers develop their own learning materials and teaching strategies and present demonstrations of them to their peers. These seminars embody the strategy of giving teachers themselves

decision-making power and making them agents of change in educational reform. About 77000 schools will be affected by this project. Results so far include increased student attendance and learning, as well as increased empowerment of and satisfaction on the part of teachers (*52*).

3.8.6 *Indonesia*

In the Little Doctor Programme, selected students are trained to act as motivators to promote health and healthy behaviour in the school, home, and community. Compared with non-participating schools, schools employing the Little Doctor Programme demonstrate large improvements in sanitation, environment, personal hygiene, and the level of health awareness of parents and in the communities (*53*). The programme has been widely applied and has the full support of the President.

3.8.7 *Pakistan*

A school mental health programme has been introduced in Rawalpindi District, with a school population of 1.5 million students. The programme aims at risk prevention by teaching life skills. Schools encourage students to communicate their knowledge to their parents and communities (*54*).

3.8.8 *Philippines*

School health programmes in the Philippines derive their fundamental mandate from the Philippine Constitution, which declares the health and well-being of the citizens, especially young people, to be a fundamental value of the nation. From this provision is derived a comprehensive plan for schools to address children's health, including statements of vision and mission, policy directives, objectives, programme components and activities, recommended mechanisms for coordination, and a plan for monitoring the programme. Called the Integrated School Health and Nutrition Programme, it aims to address the needs of the Philippines' large population and to take account of their limited and inequitably distributed resources and the high prevalence of poor health among students, teachers, and other school staff. The programme reaches a school population of more than 15 million persons and is guided by the following directives:

- Programme planning and implementation shall be directed towards the improvement of the health and nutritional status of the entire school population.
- School health services shall be geared towards the protection and maintenance of health through early diagnosis and treatment.

- Health, nutrition, and environmental education shall be integrated with curricular activities to encourage the development of desirable health and eating habits by students.
- An approach that enables teachers to educate children to in turn educate parents shall be used.
- Curriculum enrichment shall be a continuing concern.
- Nutritional interventions shall be based on the principle of self-help and shall strive for active involvement of the school, family, and community.
- School feeding programmes shall aim at rehabilitation of the undernourished.
- Self-reliance shall be enhanced through the production and utilization of indigenous crops and plants.
- Formal research and evaluation studies shall be used to measure the impact of the programme.
- Intra- and interagency collaboration at all levels shall be strengthened.
- Continuing staff development shall be instituted (55).

3.8.9 *United States*

The approach implemented in the United States by the Centers for Disease Control and Prevention comprises seven long-term, integrated strategies to promote school health programmes. About half the strategies focus on programme implementation; the rest focus on research to assess and improve the impact of programmes. The strategies are described below:

- *Create an operating unit at the national level* employing staff experienced in implementing and conducting research on school health programmes. These staff are responsible for implementing the following strategies.
- *Carry out health surveillance to define programme objectives*, including the identification of priority health outcomes among young people, health behaviour that influences those outcomes, knowledge, attitudes, and skills that affect behaviour, and school policies and programmes to improve specific knowledge, attitudes, skills, and behaviour.
- *Provide support for states*, so that they can help local schools implement effective programmes. Resources are provided for the establishment of senior policy positions in the state departments of

education and health to help local school districts improve and integrate the elements of school health programmes. This strategy provides each state the capacity and flexibility to determine and pursue its own unique interests, needs, and actions. In this fashion, collaboration between the education and health sectors becomes possible because the necessary resources are made available.

- *Support and encourage national organizations* in helping local schools implement effective programmes. Financial and technical support is accordingly provided to about 25 national nongovernmental education, health, and social service organizations, many of which have working affiliates at the state or local level.

- *Convene relevant groups to help plan and implement strategies collaboratively*. Representatives are periodically convened from: each state department of education, health, and social services; nongovernmental organizations; federal agencies; organizations representing higher education; and philanthropic organizations.

- *Conduct research* to assess programme effectiveness, including research to develop and evaluate promising interventions; research to assess the impact of efforts to help schools implement interventions; and evaluations to assess the impact of states' efforts to help schools implement school health programmes.

- *Synthesize the results of research and programme activities* to enhance their applicability to the improvement of programme effectiveness. For this strategy, research registries and meta-analysis databases have been instituted to compile and synthesize the results of research conducted to reduce each of several critical risk behaviours (e.g. tobacco use, unsafe sexual behaviour), identify school health programmes that have shown evidence of effectiveness in reducing specific risk behaviour, and develop research-based guidelines for reducing risk behaviour through school health programmes.

3.9 Local-level strategies

At the local level the need for effective strategies to implement school health programmes is the greatest. The local level is also where the bulk of research takes place, and the greatest concentration of wisdom derived from experience is to be found. This section utilizes the definition of school health programmes originally discussed in section 2.3 and focuses on school health environment, school health services, and school health education. Each component of the definition is discussed with reference to individual elements, issues,

and strategies. Examples are presented as appropriate. Except where noted, examples come from the background papers listed in the Acknowledgements.

3.9.1 *Environment*

Supportive school environments depend on the condition of both the physical (buildings, grounds, and interior structures) and psychosocial environment. Increasingly, the concept of school health environment is understood to include also the community in which the school is located. The condition of the physical environment (its cleanliness and the availability of waste receptacles and safe water and sanitary facilities) and the policies regarding its use (with respect to smoking, weapons, and the kinds of food served in the cafeteria) can have a powerful reinforcing or contradictory effect on other health messages or practices promoted in the school. Indeed, when the basic elements of a healthy environment — safe water and sanitary facilities — are absent, it is difficult to describe a school as health-promoting.

The psychosocial environment is strongly affected by the culture of a school, i.e. the way it is managed and organized. A supportive culture has a buffering effect on the psychosocial transitions and stressful events students can experience in their lives. For adolescents especially, whose lives are characterized by change, school environments can play an important role in their well-being. For staff, a school environment that values mutual respect and encourages their participation in decision-making enhances their working life and thus the school experience of students.

Community members should feel that the school is open and receptive to their ideas and participation. Schools in turn should be supported by community members by their participation in school programme development and through the provision of adequate financial resources to carry out the school's mission. Such support is essential for an effective school health programme. It is also needed to multiply the effect of training and service delivery, promote environmental and behavioural change, ensure successful compliance with health screening programmes, and reinforce health-supporting relationships between parents and children.

Implementation issues

- Many schools have policies or philosophies that support the well-being of students; the key to a supportive environment is turning philosophy into action. Such an environment includes teachers

acting as advocates for students, the existence of school safety patrols, problem solving based on the exchange of information, flexibility of procedure in dealing with individual students, teachers, and other school staff serving as role models for students, and early intervention with students to help solve problems.

- The sustainability and replicability of projects like school health programmes "depends entirely on how well the community participates in the project from the early stages of planning and phasing in to the final stages of evaluation and phasing out," as a report on a school health and sanitation programme in the United Republic of Tanzania makes clear (*56*). The process of nurturing community participation, the same report continues, is "long, slow, and tedious", and it further warns that there are "no short cuts for soliciting true community participation".

- Facilities such as functioning latrines, safe water for handwashing and drinking, means of waste collection and disposal, and effective insect control are essential for establishing and maintaining a healthy school environment (*57–59*).

- School policies, programmes, and environments should promote relations between girls and boys that are respectful, non-discriminatory, and non-abusive. Instances of discrimination, double standards, or abuse between students and between staff and students should be openly discouraged and, if necessary, condemned, to create social norms firmly against abuse, violence, and discrimination.

- Schools can be the centre for a variety of projects for community improvement, such as programmes to improve both physical and mental health in the community. Schools can also serve as training centres where parents can learn more about child development, and how to be effective in raising their children, as well as receive support that enhances their feelings of self-worth and competence. Such programmes are most effective when parents meet together in groups. Parent involvement should begin early and be sustained throughout the life of school health programmes. Educating parents about their own and their children's reproductive health is an example of the kind of issue that might be addressed in this manner.

- The reduction of helminth infections, especially in areas where they affect the health of everyone in a locality, may provide a catalyst for mobilizing community involvement in school health programmes. A collaborative effort should be encouraged by the school and community to involve non-school and preschool children, as well as the adult population, in the deworming component of intervention.

Strategies

To help build community participation and support for adolescent health, WHO has developed the following approaches, which should also be useful in building support for school health programmes:

- *The grid approach* is a one-week workshop in which participants use a systematic process to identify health problems, examine existing responses, and identify actions to reduce gaps between the two (*60*).
- *The gatekeeper method*: "Gatekeepers", i.e. practitioners working in the field, are asked for their opinions and recommendations about problems and their possible solutions. These gatekeepers can also be asked to describe what sort of information they need, to indicate how they might react to suggested plans or reforms, and to identify who else should be interviewed (*61*).
- *Drama as a research tool* involves students and adults in the community in discussion and decision-making exercises after seeing a student performance on an important topic. By using a shared experience to stimulate reaction, dialogue is encouraged (*62*).

Examples

The Kair High School, a large multicultural comprehensive high school in the Sydney metropolitan area of New South Wales, Australia, has created a supportive school environment by improving relationships between teachers and students, among teachers, and between parents and teachers. The school's primary objective is to promote teachers as adult role models for students and foster relationships of trust between teachers and students. One element of this approach has been implementation of a policy for dealing with student crises (e.g. deaths, accidents, traumatic events). The policy outlines the school's philosophy and the guidelines, roles, and actions for staff, parents, students, and community members (professionals, clergy, etc.) to follow when confronted with such events. Other practices include teachers acting as advocates for students, spending time and sharing personal experiences with them, and intervening early to address students' problems.

The HESAWA School Health and Sanitation Project, a community mobilization project in the United Republic of Tanzania, took a three-step approach to improvement of health and sanitation through schools: screening students to identify their main health problems (a survey was conducted by senior students), calling a meeting with parents to analyse problems and identify underlying causes, and agreeing on actions to be taken collectively and individually. The project was sponsored by the government of the United Republic of

Tanzania and the Swedish International Development Authority. Its results have been positive, and include the following:

- The project created an awareness among the target populations of environmental problems related to sanitation, as well as their causes and possible solutions.
- Communities were motivated to participate in decision-making and in implementing programme activities.
- The project increased the availability of sanitary facilities and promoted the use of locally available materials.
- The project increased the interaction, especially at the community level, between government extension workers, teachers, and community members in finding solutions to prevalent health problems.
- Great potential exists for replication of the project in other locations (*56*).

3.9.2 *Health services*

Models for the provision of school health and other services vary tremendously, not only between developed countries and developing ones but also among and within developed nations themselves. Inevitably, the provision of school health services reflects how health care in general is organized and provided in a society. The amount of financial support available for the general health service system varies greatly across localities and nations and also from year to year. The available funding in turn affects the scope and amount of services provided, the availability of trained staff, and the capacity to plan and evaluate efforts.

Implementation issues — developed countries

The health services provided in many schools are not comprehensive enough to contribute substantially to such critical health-related problems as school failure, school dropout, teenage pregnancy, substance abuse, and violence (*63*).

Available data suggest that school-based health centres can sometimes provide adolescents with greater access to care, a wider range of services, and a greater depth of attention to issues of adolescent health than do traditional physicians' offices. Although there is not much data available with respect to specific health outcomes, reports and comments from educators and health-care providers indicate that school-based health centres can improve school attendance,

reduce the level of disciplinary suspensions, and lower dropout rates (*37*).

Implementation issues — developing countries

In developing countries, school health services are likely to include such activities as identification of health problems, treatment of common ailments and injuries, growth monitoring, monitoring of disease outbreaks, and vaccinations.

A review commissioned by UNICEF of school health services in sub-Saharan Africa reveals a focus on the following six areas:

- increasing students' access to health services;
- targeting specific diseases;
- involving the community in problem solving;
- the use of extracurricular activities that reinforce health messages;
- the use of activities that foster communication between children and from children to parents;
- the implementation of curricula as planned and developed.

Schools are increasingly being used as a delivery site for and partner in the fight against helminth infection. The Partnership for Child Development (formed in 1992 by WHO, UNDP, and the Rockefeller, Edna McConnell Clark and James S. Mcdonnell foundations) is investigating how a group of specific interventions, including distribution of anthelminthic medication and micronutrient supplements, can best be delivered through schools. These interventions should be easily integrated with other programmes of high priority, such as immunization and nutrition programmes, maternal and child health care, surveys of tuberculosis, leprosy, and sleeping sickness, as well as control of diarrhoeal disease.

School health services should be available during regular school hours with provision made for their availability whenever the school is closed. Health service providers need to have an effective system of coordination so that they are aware of each other's efforts when they treat students with multiple problems.

School health services can include pregnancy tests, cervical smears, and gynaecological examinations; referral, counselling, and treatment services; as well as services for the prevention of AIDS and sexually transmitted diseases. Students should also have access to contraceptives and information about contraception when legally permitted and culturally acceptable.

Implementation issues — general

In establishing school health services, communities must consider the following questions:

- Which preventive and treatment services are best provided at schools, according to relevant needs and resources?
- Which services already available in the community should be duplicated in schools?
- What kind of communication systems should be developed between school health service providers and community-based health service providers?
- To what degree can school health services be financed through private and public health insurance? How will services that are not insured be financed?
- How will issues of equity in quality and availability be addressed across school systems?

Examples

Where low-cost chemotherapeutic interventions to control the morbidity of helminth infections have been implemented, disease symptoms, student performance, and school functioning have improved (*64–69*). For example, a study of school-based treatment of helminth infection in Montserrat showed an overall reduction in both the prevalence and intensity of infection. Anthelminthic medications can be given through schools on a mass scale where there is a high prevalence of infection, either by the existing health service system or by non-medical providers (*66, 70*).

3.9.3 *Water and sanitation services*

Latrines, safe water for drinking and sufficient water for handwashing, means of waste collection and disposal, and effective insect control are minimum prerequisites for establishing and maintaining a healthy environment.

Schools can be the place where communities are introduced to new sanitation practices and technologies.

In Japan, national regulations require annual checks in schools on:

- the quality of drinking-water, swimming-pool water, and drainage systems;
- the disinfection of the water supply and drainage systems;
- classroom lighting and the general quality of illumination in the building;

- the ventilation, heating, and noise levels in the classroom;
- additional problems identified by the principal (*71*).

3.9.4 *Nutritional and food safety services*

Three major nutritional problems of primary-school-age children in developing countries are protein–energy malnutrition, micronutrient deficiencies, and short-term hunger. A height census is the most commonly used method for assessing the nutritional status of primary-school children. Their nutritional needs should be addressed through a combination of interventions, including nutritional education, micronutrient supplementation programmes, school feeding programmes using fortified foods as appropriate, and school-based deworming programmes (*5*, *6*).

Implementation issues

If properly timed, school feeding programmes can be very effective in relieving short-term hunger. They can also act as an incentive for parents to send their children to school, as they can thereby save money in the family food budget. The potential of school feeding programmes to improve overall nutritional and educational status is an area where further research is needed.

The composition and timing of school meals and their nutritional value (affected by, for instance, the amount of energy, protein, and micronutrients consumed) play a role in educational achievement (*72*). Cost-effective programmes are those targeted to schools located in areas with a high prevalence of malnourished students or those at risk for malnutrition.

School-based programmes to reduce nutritional deficiencies and school feeding programmes that provide food to students are conceptually linked, but in practice they are rarely planned and implemented within the same administrative structure. The nutritional deficiencies of students are typically addressed through the health care system, under the responsibility of the ministry of health. On the other hand, school services that prepare and serve food to students (school food services) are commonly managed by either public or private sector providers, and are often overseen by the ministry of education.

Examples

The height of children in the first level of primary school is an indicator of their health and nutritional history from birth and also reflects the quality of environment in which they grew up. A school height census is an instrument for locating areas of greatest poverty and need. The cost of administering it is no more than US$ 0.10 per child

and is much lower when the census becomes a routine part of the school's health programme. A number of South American countries have implemented a school height census, including Argentina, Chile, Ecuador, and Uruguay, as well as some countries in other regions of the world, such as Kenya and the Philippines (*73*).

Studies conducted in India and Jamaica found that provision of school meals — lunch and breakfast — had a significant effect on students' attendance and performance in school. In the USA, a study of a school breakfast programme found that children of low-income parents who received breakfast at school scored higher on tests of basic skills and were less likely to be tardy or absent than were children of low-income parents who did not receive breakfast at school (*74*).

Some micronutrient supplementation programmes involve the distribution of ferrous sulfate tablets once a day to students deficient in iron until their deficiency is remedied. Recent studies have found that test scores of iron-deficient students improve after ferrous sulfate supplementation.[1] One treatment programme for iodine deficiency uses a dietary supplement given once to each child every 2 years, at a cost of US$ 0.12. In another programme, iodine supplementation using iodized salt brought the average learning capacity of a group of iodine-deficient students in Guizhou province, China, close to that of other students.[1] Vitamin A deficiency can be treated by introducing changes in dietary practices or through provision of vitamin A capsules. Each capsule costs US$ 0.02–0.03, and they can be obtained in most countries through UNICEF.

In the Islamic Republic of Iran, school health programmes stress the importance of iodized salt. Students are asked to bring salt from home to school, where it is tested with a simple solution to determine whether it is adequately iodized. The results are used as a starting point for classroom discussions on iodine-deficiency disorders.

Strategies

Coordination and collaboration between the ministries and agencies involved in nutritional and food services will improve programme operation at all levels.

Wherever possible, school feeding programmes should use locally produced food supplies, so as to avoid dependence on external sources, provide foods that are consistent with local diets and resources, and stimulate local food production (*75*).

[1] Berkley S. & Jamison D. A conference on the health of school-age children. Sponsored by the United Nations Development Programme and the Rockefeller Foundation. Bellagio, Italy, August 1991.

Best results occur when school feeding and nutritional programmes are administratively linked.

Foodborne diseases are a serious problem in developing and developed countries alike. While improved sanitation, safe water supplies for handwashing and drinking, and the wide application of food safety technologies (primarily in developed countries) have nearly eliminated disease in some areas, the global level of morbidity has not been reduced. Especially in developing countries, where foodborne diseases have become more serious because of deteriorating sanitary conditions in rapidly expanding towns and cities, increased health education directed toward the handlers and consumers of food is needed to create awareness of the factors that can spread foodborne disease. To that end, it is important to:

- introduce food safety into the training curriculum for school teachers and food handlers at school;
- introduce food safety into the school curriculum for students;
- implement food safety education through a variety of media (e.g. comic books, television, radio);
- emphasize the involvement of children in the educational process (child-to-child education) and in the education of their parents about what they have learned (child-to-parent education);
- provide essential facilities (e.g. clean water and soap for handwashing, latrines, and means of waste disposal) (*76*).

3.9.5 *Counselling, psychological, and social services*

Maintaining and supporting the psychological health of students and staff are as important as addressing physical health. An individual's psychological well-being is a critical element in maintaining physical health, as are the self-esteem and self-confidence with which healthy decisions can be made and high-risk behaviour avoided. An effective school counselling and social support programme is thus an important component of a school health programme.

Mental health problems, such as suicide and depression, and other stress-related disorders affect large numbers of young people. Children and adolescents with emotional problems exhibit their impairments in a variety of ways. They may fail academically, be rejected socially, and have a poor self-image. They may have difficulty relating to peers and adults and may lack respect for the laws of their country. These are preventable problems if young people's resources for coping with stress can be enhanced and steps taken to identify and respond to the early signs and symptoms of mental health problems.

Implementation issues

Among other important characteristics, an effective school counselling programme should:

- take into account the relationship between the school and the community, as well as any unique cultural values;
- involve families and community members as partners in the planning, implementation, and ongoing evaluation of counselling services;
- utilize the skills of school and community mental health professionals (*77*).

A school counselling and social support programme should be concerned not only with the prevention and management of the emotional and psychological problems of young people, but also with the promotion of a healthy lifestyle, the improvement of the psychosocial aspects of the school, and the development of educational methods that take into consideration their impact on the mental health of students and staff.

Examples

A Norwegian programme to prevent bullying offered school systems workshops for teachers and parents, booklets, videos, and training for students in problem solving and social skills, all of which emphasized in a firm but non-aggressive manner that bullying would not be tolerated (*78*).

In Rawalpindi District, Pakistan, through the school mental health programme students work together to promote their mental health and that of their families and communities (*79*). The programme uses slogans, essay and speech contests, mental health committees, parent–teacher associations, and training workshops for district education officers. Evaluation of the programme shows that students improved their grades, increased their attendance and decreased their dropout rates, and that the number of appropriate general and mental health case referrals was increased.

Another innovative mental health education curriculum has been developed in Uganda as a part of the health education programme for secondary school students (*80*). The curriculum addresses the relationship between physical and mental illness; the effect of stress and culture on mental disorders; the etiology, prevention, and treatment of mental disorders throughout life; substance abuse; sexual disorders; mental retardation; suicide; and mental disorders associated with AIDS.

Strategies

Mental health education should be part of a comprehensive school health programme. Mental health education is thought to be most effective when:

- the content of teaching is relevant to students' lives;
- students take responsibility for and participate in the development and implementation of classroom activities;
- students acquire health knowledge and health-promoting values and practise health-promoting behaviour.

3.9.6 *Services to improve the health of personnel*

Health promotion for school personnel means applying the concepts, principles, and strategies of health promotion to the workplace, its employees, their families, and the organizational, managerial, and environmental characteristics of the school (*81–83*).

While health-promotion programmes have been widely implemented among the general population in developed countries, health promotion programmes for school personnel are not widely available in either developed or developing countries (*84, 85*). They are generally underfunded and given a lower priority than other aspects of school health programmes because they are not seen as affecting students directly. Schools are, however, ideal places for health promotion in the workplace, as they employ significant numbers of adults and there is the potential for these adults to serve as role models for students and to foster a health-promoting living environment (*86*). Inevitably, the mental and physical health of school staff affects students directly through the quality of teaching and the attributes of the school's psychosocial environment.

Existing programmes are not well documented and there are few well designed research studies that evaluate them. There is a large gap between theory and practice with regard to providing health promotion services for school personnel.

Implementation issues

Important elements of health services for school staff include:

- an approach that targets all school employees rather than only high-risk personnel;
- information on exercise, nutrition, weight control, stress management, substance abuse, safety, and women's health;

- effective print, audio, and visual learning materials;
- counselling, assessment, screening, and referral services;
- pre- and in-service teacher training on health promotion.

Implementation problems can include:

- staff health promotion being given a low priority relative to other school concerns;
- limited interest;
- insufficient skills for effective implementation;
- inadequate funds.

While only a few programmes in developed countries have been empirically evaluated, studies support their feasibility and value to both teachers and students. Improvements in staff absenteeism rates and morale, as well as the quality of classroom instruction have been documented (*86*, *87*).

Strategies

Teacher associations, unions, or similar organizations can play a role in advocating and helping to develop and implement health promotion programmes for staff. Relevant policies, guidelines, and effective leadership can be used to encourage and support health promotion for staff, including pre- and in-service training (*87*). Such programmes are more likely to be sustained if they have been developed in response to the needs and interests of school personnel.

Examples

Initiatives to prepare staff to teach about health also educate them about their own health. A number of countries in Asia (India, Indonesia, Malaysia, the Philippines, Sri Lanka, and Thailand) have initiated curriculum revision for teachers as well as students (*88*). In the Syrian Arab Republic, the national government addresses some aspects of school health through short courses for school health staff and teachers (*89*).

Teachers who have participated in school health promotion programmes report improved attitudes towards their health and an increased perception of general well-being (*86*). In two states in the USA, the health knowledge and behaviour of school personnel were found to have been positively affected by staff health promotion programmes (*87*).

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In Egypt, a school-vacation "summer club" is used to provide health-related activities and encourage behavioural change for students and teachers away from the school environment. The summer clubs are government funded and planned according to the findings of an assessment of needs. An evaluation of the effectiveness of summer clubs found that teachers, students, and the wider community all benefited, and that teachers gained "personal and career advantages" from participation (*90*).

3.9.7 *Health education*

Health education can be provided as a separate subject, as part of other subjects, or as a combination of the two. School health education should include a planned, sequential curriculum addressing the physical, mental, emotional, and social dimensions of health for students from the earliest to the highest levels. It should aim to influence students' understanding, attitudes, and behaviour concerning health. In practice, school health education is often a less ambitious endeavour, featuring curricula based on single topics or specific disease interventions. Ideally, health education will be given the status of a separate subject in the curriculum and also integrated into other subjects where appropriate.

School health education should be focused on:

- behaviour and conditions that promote health or that put health at risk;
- life skills needed to adopt healthy behaviour and create health-promoting conditions;
- knowledge, attitudes, beliefs, and values related to the development of healthy behaviour and health-promoting conditions;
- providing learning experiences that allow students to practise skills and model behaviour.

School health education is comprehensive when it:

- views health as more than the absence of disease;
- utilizes all available opportunities for health education (formal and informal, traditional and alternative, inside and outside school);
- harmonizes the health messages that are delivered;
- enables students to promote conditions supportive of health;
- fosters interaction between the school, community, parents, and local health services;

- encourages the development and maintenance of a healthy environment at school (*47*).

Implementation issues

In the USA, large-scale evaluations of comprehensive school health education curricula have found that:

- school health education increases students' knowledge of healthy behaviour and decreases risk behaviour;
- teacher training in health education has a significant effect on successful achievement of health outcomes for students;
- "booster shots" of health education are necessary every 2–3 years;
- significant gains in students' knowledge can be achieved after 50 hours of instruction;
- moderate improvements in students' health-related behaviour can be achieved after 30 hours of instruction (*91*, *92*).

AIDS prevention is an important issue that should be given a high priority in school health education programmes. Education aimed at preventing HIV infection should be provided as part of a broader programme that includes education about sexuality, other sexually transmitted diseases, and issues relevant to the healthy development of adolescents. Education about HIV and AIDS should be complemented by the implementation of policies and norms that support existing national AIDS-prevention strategies and that help prevent sexual abuse and discrimination. Education aimed at AIDS prevention and related issues should be interwoven into relevant areas of the school curriculum.

The Expert Committee noted that some studies make a strong case for life skills education as part of an effective and cost-efficient health promotion strategy (*93*). Moreover, studies of topic-specific health-education curricula have found that the incidence of specific risk behaviour is reduced when life skills are developed and practised in relation to the relevant behaviour.

The effectiveness of health education is, in the end, affected by the amount of classroom time devoted to it, the extent to which school administrators support it, and the extent to which teachers feel prepared and are motivated to implement it (*94*).

Role-playing exercises, exercises using anonymous questions and responses, open discussion, training in negotiation skills for healthy behaviour, and methods of responding to peer pressure are effective means of health education.

Preventive education is more effective if it starts before the onset of risk behaviour, such as having unprotected intercourse.

Students can be encouraged to take health education messages home to their own family. For example, school-age children have been successful in bringing younger family members for immunization during campaigns, or for routine immunization services.

Guidelines for school-based programmes for the prevention of tobacco use have been developed by the Centers for Disease Control and Prevention (CDC) in the USA, in collaboration with a broad range of experts, in order to help school personnel implement effective programmes for the prevention of tobacco use. These guidelines summarize school-based strategies most likely to be effective in preventing tobacco use among young people and recommend that all schools develop and enforce a school policy on tobacco use. Schools should also provide instruction about the short- and long-term negative physiological and social consequences of tobacco use, about the social factors influencing tobacco use, about peer attitudes and norms regarding tobacco use, and about tobacco-use-refusal skills. Such instruction should be provided at every educational level. Teachers should receive programme-specific training, and parents and families should be involved in supporting school-based programmes to prevent tobacco use. Students and school staff already using tobacco should be encouraged to stop, and they should be supported in their cessation efforts. The effectiveness of tobacco-use prevention should be assessed at regular intervals (*28*).

In one sense, school health promotion can be described as the creation of "a capacity for reflection on one's own desires, ideals, motives and actions while at the same time trying to bolster self-esteem as far as possible" (*95*). Health education, whether for prevention of tobacco, alcohol, or other substance abuse, for sound nutrition, good hygiene, and prevention of infectious disease, or for other important public health problems, is most effective if it takes place in a supportive environment. School health education programmes should be complemented by rather than contradicted by the physical, social, and cultural environment where they take place.

School health education ideally involves students, teachers, and parents in taking action for their own health as well as the health of their families and communities, and should include action to educate young people who are out of school (*53*).

Examples

The "Let's Talk" programme in Zimbabwe aims to reduce high-risk sexual behaviour and drug and alcohol abuse. Sponsored by the

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Ministry of Education in collaboration with UNICEF, the programme uses level-specific activity booklets (for levels 4–12). Rather than focusing on the biomedical aspects of health risks (which are covered in supplementary reference sections of the booklets), the programme uses a variety of classroom activities such as scenarios and stories to help students focus on feelings, examine alternatives, think through risky situations, and make decisions. Such scenarios and stories deal with growing up, friendship and love, career choices, self-esteem, and sex roles. The problem of sexual abuse is addressed openly, including sexual abuse in the family and at school. Teenage pregnancy and relevant social norms are also discussed. Students are encouraged to participate in community projects. Teachers receive extensive pre- and in-service training. The success of the programme rests on a high level of political commitment, broad-based community support, adequate financial resources, the use of assessment research, the creation of support systems, and the development of local capacity for training.

So-called "distance learning" is an effective means of capacity building when specialized teaching resources are limited. Interactive radio instruction, for example, has gained worldwide recognition as a low-cost means of improving primary-school students' academic achievement (*96*).

In 1989, Bolivia began to use interactive radio instruction for health education; so far, the results are very promising. In response to the country's high infant-mortality rate and the health and sanitation problems resulting from a massive rural–urban migration, Bolivian education and health authorities instituted a radio programme to teach basic health concepts and promote healthy behaviour. The programme targeted children 8–13 years of age with information on diarrhoea prevention and oral rehydration, as these children often care for younger siblings and engage in household activities relating to food preparation and sanitation.

The lessons, which feature question-and-answer sessions, written and oral responses, and short dramatic presentations, emphasize active participation by the child (*97*). Both qualitative and quantitative evaluation data indicate that the lessons have had a positive impact on children's attitudes and behaviour. There is evidence of more handwashing than before, that more households are filtering their water, and that more children know how to recognize and respond to the problem of dehydration brought about by diarrhoea. Most importantly, children are beginning to understand the concept of "being healthy".

On the basis of these results, programme developers are now working on a comprehensive preventive-health curriculum for children in levels 3–5 of primary school. In addition, students in the fifth level have been attending radio classes in reproductive health, which cover the biological changes of adolescence, human reproduction, the nutritional needs of the mother and infant, and caring for the newborn.

398 *Physical education*

Traditionally, physical education is closely associated with health education and focuses on the development of motor and sports skills. In recent years, the idea of lifelong health fitness has emerged as a priority. Physical education and recreational activities ideally can provide opportunities for building self-confidence and encouraging friendships between boys and girls in low-pressure, group situations.

Implementation issues

A range of conditions around the world affect the physical education needs of and opportunities for young people:

- In many countries in the developing world, young people perform physical labour as well as walk long distances to school, either of which can be beyond their physical capacities.
- In contrast, in some developed countries, young people suffer from too little physical activity, becoming obese and at risk for cardiovascular disease.
- Religious or cultural traditions may prohibit the participation of girls in physical activities in some countries.
- In many settings, a health-oriented approach to physical education using the approach of lifelong habit building may be more valuable than a highly competitive approach emphasizing sports skills and motor development.

Examples

There is evidence linking physical education to improved academic performance. The Trois Rivières study in Canada demonstrated significant gains in academic performance among primary-school children as a result of increased time spent on physical education (98).

The "Go for Health" programme has combined classroom health education, nutritional improvements in school lunches, and changes in physical education to foster adoption of a healthy diet and regular exercise by children in Texas (USA). The programme produced statistically significant changes in diet, such as a decrease in the use of

salt, and increases in levels of physical activity. The programme also influenced other health-promoting behaviour (*99*).

"Trim and Fit" is a physical fitness programme in Singapore complemented by educational activities, a healthy food service, and student and parent involvement. School activities, which aim to reduce obesity, improve physical fitness, and provide incentives for students to keep physically fit, also include national-level advocacy for health by school leaders. Students are given National Physical Fitness Award tests annually, and schools with good overall scores also receive awards. A programme component for overweight students includes an exercise regimen as well as counselling on proper nutrition. Changes to promote a more healthy school environment include offering guidance on the selection of healthy and nutritious food in the snack bar and the provision of physical fitness equipment and facilities. Launched in 1992, the programme has succeeded in improving nationwide physical fitness results. Implementation of the programme is supported by the Ministry of Health, the Singapore Sports Council, and the Ministry of Defence.

3.9.9 *Training*

Training for school personnel is an important aspect of school health promotion programmes. Studies show that training teachers in the use of a health education curriculum improves their implementation of it (*91*).[1] Teacher training also builds the commitment, understanding, skills, and attitudes that enable teachers to use curricula effectively and confidently. A complete training programme should have the following five broad goals:

- for teachers to have an appropriate understanding of the human organism and causes of disease and injury;
- for them to develop positive attitudes towards and commitment to a comprehensive approach to school health;
- to increase their understanding of the principles of behavioural change that are effective in health education;
- to improve their teaching skills in areas such as class discussion, role playing, cooperative group activities, small-group discussion, community-involvement activities, family-communication activities, games, and simulations;

[1] Ross JG & Nelson G. *The role of teacher training and other factors in fidelity and proficiency.* Presented at the 63rd Annual Convention, American School Health Association, 19 October 1989, Chicago, IL.

- to prepare teachers to deal with sensitive issues and refer students with additional needs.

Implementation issues

Training for teachers, supervisors, and school administrators can be offered for curriculum development, the provision of school services, and improvement of the school environment, as well as in specific content areas.

Successful teacher training:

- addresses issues of concern identified by teachers;
- is conducted as close as possible to teachers' workplaces;
- covers theory and demonstration, includes practice teaching, offers feedback on performance, and emphasizes peer-coaching skills;
- has the support of both teachers and the school administration;
- enables participants to feel a sense of ownership of the programme;
- uses adult-learning theory;
- is conducted over an extended period of time;
- provides opportunities for reflection and feedback;
- involves a conscious commitment by participants;
- builds specific skills;
- works with groups rather than with individuals.

Strategies

The Expert Committee noted that accepted recommendations for teacher training include the following:

- teacher training should be reviewed and upgraded at pre-service, in-service, and continuing-education levels;
- teacher-training programmes should ensure that student teachers receive field experience;
- routine workshops, seminars, and short courses should be carefully designed and implemented;
- health teachers and staff as well as non-teaching school personnel should be trained;
- mechanisms for continuing education and supportive supervision to maintain and enhance the quality of teaching should be developed (*53*).

3.9.10 *Coordinating school health programmes*

Even schools in which all the components described above are in place may not have a comprehensive school health programme, or be health-promoting in the fullest sense, if these components are not coordinated and managed so as to maximize their benefits. In a health-promoting school, administrators encourage opportunities for experimentation and innovation. Students and staff have opportunities to make decisions and change existing practices.

What makes a school health programme comprehensive? Key characteristics are that it:

- focuses on key behaviour and conditions that affect health and learning in the school or region;
- fosters the development of a nurturing and caring environment within the school, home, and community;
- sets out its aims clearly;
- utilizes multiple programme components and interventions;
- coordinates interagency and interdisciplinary programmes;
- uses all available resources;
- solicits the active involvement of students;
- provides for staff development;
- receives support from the regional and/or national government.

Effective management of a comprehensive school health programme or health-promoting school depends on the following seven interrelated competences or characteristics (*100*):

- *Programme familiarity*: Leaders understand all facets of the programme.
- *Programme vision*: Leaders have a clear vision of the power of a comprehensive approach, the unique contribution of each programme component, and the value of coordinating and reinforcing links between them.
- *Leadership and management skills*: Administrative tasks, such as budget preparation and the preparation and distribution of health promotion plans and policy statements are as important as providing supervision and direction.
- *Sufficient time*: Coordinating a multidimensional programme including school personnel from several disciplines, as well as family and community members, requires adequate time.

- *Programme planning and evaluation*: Leaders are able to account for their efforts, demonstrate success, and plan future activities.
- *Awareness of available resources*: Leaders are aware of, can make contact with, and mobilize the educational, health, and financial resources of the community in order to develop a truly comprehensive programme.
- *Communication skills*: Effective speaking and writing enable leaders to advocate comprehensive school health programmes.

Implementation issues

The coordination of school health programme components is essential in addressing today's complex health issues. For example, the absence of an AIDS vaccine makes the adoption of safer sexual practices the greatest hope for AIDS prevention. Education about sexuality, sexual risk behaviour, and healthy decision-making should be complemented by the existence of health services and the development of school and community norms that promote self-esteem, mutual respect, and good health. Success in sex education occurs when schools deliver education and services in an environment where social norms favour delaying sexual activity and, when appropriate, encourage the use of condoms. Further, school health programmes are strengthened when school leaders forge ongoing relationships of trust with parents and members of relevant community organizations. Sex education, unlike other subjects in the school curriculum, addresses values and practices that may have been traditionally handled within the family or other community institutions. To be effective, sex education messages given to young people need to be consistent and to be reinforced by and acceptable to the community and family. Health-promotion programmes for staff can build teachers' knowledge of and skills in effectively discussing issues of sexuality and related issues of sex roles, sexual abuse, and sex discrimination. School policies and action plans that reduce and prevent sexual harassment and discrimination based on race, gender, or sexual orientation can contribute to a positive psychosocial environment, and thus to the educational achievement of children. Thus, education to prevent HIV infection must be part of a well coordinated effort involving other components of school health programmes.

A similar case can be made for the prevention of injuries. Successful intervention to prevent injuries involves three main strategies: the passage and enforcement of laws, education for behavioural change, and changes in the design of products and the physical environment. At school, school-wide safety policies should be enforced

and information about potential hazards should be available (*101*). School-based injury prevention programmes should include not only additions to the curriculum, but also efforts to improve the school's physical and psychosocial environment and the education of and active participation by administrators, staff, teachers, and parents. Injury prevention education is strengthened by interaction with and support of the community and other components of the school's health programme.

Likewise, control of helminth infection will have greater success if health education, improved water supplies and sanitation, and environmental management are integrated with chemotherapeutic and other control activities.

On the whole, school feeding programmes operate independently of other school health initiatives. This isolation demonstrates how little it is realized that school feeding programmes are unlikely to achieve any of their attendance- or performance-related objectives without complementary and reinforcing measures. Analysis of and change in the design and implementation of school feeding programmes cannot be done without intersectoral expertise, such as that provided by food-aid-management, education, health, and nutrition professionals.

To ensure that all dimensions of a school health programme cohere, they must be focused and integrated, which requires effective leadership and management. However, the Expert Committee noted that effective leadership of school health programmes is not an automatic result of professional preparation in school administration, effective overall school district leadership, or even well developed programmes in the eight component areas of school health programmes, and wished to stress that a new approach is required (*100*).

Examples

Between 1962 and 1988, a multifaceted dental health programme involving fluoridation of the water supply and health education improved dental health in Switzerland. By a comparison of the treatment needed by children in 1962 and 1988, it was calculated that 40 million Swiss francs were saved each year as a result of the achievement of lower caries levels. The programme targeted children between 5 and 17 years of age and included topical applications of fluoride, supervised tooth brushing exercises six times each year, instruction in oral hygiene, and dietary advice. In 1967, no 15-year-old students were caries free; in 1988, 34% were. The programme costs are estimated to have been a total of 5 million francs for education and tooth brushing exercises and 0.5 francs per person per year for

water fluoridation. Programme success was bolstered by increased availability of fluoridated toothpaste and fluoridated salt during the same period. In countries without fluoridated water or fluoridated salt, reductions in caries have also been observed when school oral health programmes and fluoridated toothpaste are introduced (*102*).

The school system in New South Wales, Australia, offers another example of a coordinated approach. In conjunction with the state cancer council, schools reinforce classroom instruction on skin-cancer prevention by providing advice on low-cost shade structures, improving teachers' effectiveness as role models by encouraging them to wear hats while outside on duty, involving parents in outdoor "greening" projects to increase natural shade cover in playgrounds, supporting the school "no hat, no play" policy, and providing low-cost sunscreen, hats, and sunglasses.

3.9.11 *Key themes*

Several themes surfaced repeatedly in the Expert Committee's review of local strategies to improve school health. They may provide guidance for schools and nations in the process of introducing or coordinating their school health programmes.

- National policies and resources should support a comprehensive approach to reinforce and guide local efforts.
- Classroom health instruction is but one part of a comprehensive school health programme; it ideally is complemented by health services and a healthy school environment.
- To be most effective, the messages of school health programmes must be reinforced by community organizations, the family, and the media.
- Many important resources (e.g. school nurses, community health services, universities) are underutilized in efforts to improve school health programmes.
- The quality of a school health programme can be either enhanced or undermined by the quality of the school's organization and environment.
- The improvement of girls' health and education should be a priority, as this will improve women's health and the health of their children and families.

Those implementing school health programmes should also consider that:

- Successful programmes are based on sound theoretical principles and an analysis of local needs.

- Combinations of strategies are more effective than single measures.
- Student involvement is central to success; the mobilization of young people to improve personal, school, and community health can be a powerful tool.
- Training of teachers and other school staff is essential to success.
- Teaching life skills is most effective when begun early, so that students master them before they face high-risk situations.
- School staff have the opportunity to influence young people in their capacity as role models by talking with them about sensitive issues, helping them to obtain further assistance for specific problems, and giving them information and suggesting strategies for improving health.

4. Research on school health programmes

Determining which investments in young people's health, nutrition, and education yield the greatest benefits requires care. Decisions to invest resources in one area and not in another are routinely made by national governments, nongovernmental bodies, United Nations agencies and their regional offices, public and private donor organizations, and schools. These decisions directly affect the health of young people, their families, and, ultimately, their communities. Research on school health programmes can guide these choices and help decision-makers to:

- use existing knowledge to help design school health programmes;
- verify that programmes are relevant for the people for whom and the school systems and communities in which they operate;
- monitor programme implementation to determine whether programmes are being implemented as planned, corrected when required, and improved as needed;
- measure how programmes affect the health and education of young people, and the health of school staff, and whether they do so cost-effectively.

Research on school health programmes includes:

- intervention studies, the majority of which are carried out under highly controlled conditions;
- demonstration studies, which attempt to reproduce the results of intervention studies under normal programme conditions;

- dissemination studies, designed to investigate how successful demonstration studies can be more widely replicated and sustained.

Intervention studies are the most common in the field of school health programmes. Although there has been a growing number of demonstration studies, dissemination studies are relatively rare.

The emphasis of this section of the report is on research as a practical activity that results in action. The intention is therefore to focus on those questions that, if answered, can both result in progress and help identify priorities for the future.

The state of research is uneven with regard to the elements of school health programmes as defined in section 2. School health services and school health education have been investigated in some depth. Less research has been done, however, especially in developing countries, on the school environment, health promotion for school personnel, joint school and community projects, nutrition and food services, physical education and recreation, and mental health and counselling.

There is also relatively little research that examines the effects of a comprehensive approach to integrating these elements. However, there is sufficient evidence that there is a benefit to be gained by addressing more than one element in a single programme.

4.1 Some examples of existing knowledge

There have been many significant research findings concerning the link between health status and the content and implementation of school health programmes. For example, the findings below stand out as especially significant:

- Individual health-compromising behaviours tend to be associated with other risk behaviours; the same association is found among health-promoting behaviours (*103*).
- Five major health and nutrition problems are especially suitable for cost-effective intervention through schools:
  - helminth infections
  - hearing and sight impairments
  - short-term hunger
  - protein–energy malnutrition
  - micronutrient deficiencies (*5*, *6*).
- Evidence linking the educational level attained by girls to their health, the health and well-being of their future children, and their ability to contribute to the community is unequivocal (*10–13*).
- The quality of a school's physical and psychosocial environment can influence the health of students and staff (*104–107*).

- The most effective health education curricula emphasize the acquisition of skills, are sequentially developed, with lessons building on those provided before, utilize a broad range of teaching methods, and take into account the interdependence of the student, peers, the family, and the community (*47, 91, 108–110*).
- When family planning and reproductive health care are provided through multiservice, school-based health clinics, they have shown promising results in reducing pregnancy among high-risk adolescents (*103*).
- School health programmes are among the most cost-effective methods of enhancing the health and development of young people (*22, 24*).
- Research indicates that the successful diffusion of innovations is influenced by:
  - the perceived attributes of the change;
  - the type of decision-making used in adopting change;
  - the means of communication by which change is spread;
  - the nature of the social system in which change is introduced;
  - the extent to which agents within that system support the change;
  - the extent to which the innovation responds to the perceived needs of teachers in their professional role in the school (*52, 111–114*).

4.2 Critical needs

The Expert Committee identified five priorities for further research:

- better data, especially at the national and local level, for planning school health programmes, and simple, flexible tracking systems for monitoring programmes and evaluating improvements in the health of children;
- better analysis, wider dissemination, and better use of existing data, especially at the local level;
- systematic evaluation of theory-driven interventions and programmes built on the foundation of promising practices, to assess their effectiveness in changing health-related conditions and behaviour and in improving the health of young people and their ability to take advantage of their education;
- investigation of the advantage of coordinating programme components in a comprehensive approach;
- the broad use of research that enables the community to participate in the research process, and thus serves as a means to educate and empower the community for action.

4.3 Major questions for research

If research is to be useful for guiding the development of school health programmes and their practice, it must address the following questions:

- What indicators can be used for planning and monitoring school health programmes?
- What is the health status of young people and the nature of the health risks they face?
- What are the factors that reduce the enrolment of girls in school?
- How can countries assess the infrastructure available to develop and sustain school health programmes?
- What research on the school health environment, health education, and health services — and their integration — can guide practice?
- How cost-effective are comprehensive school health programmes and which specific health interventions can be best delivered through them?
- What is known about the diffusion and adoption of innovations in school health programmes?
- What is known about the relationship of health to the school organization?

4.4 Indicators for planning and monitoring school health programmes

Several types of indicators are necessary for the planning, implementation, and monitoring of school health programmes. Some are necessary to measure programme implementation and development. Others are needed to measure programme achievements and outcomes. Some important indicators are:

- indicators of children's health status;
- indicators of learning ability, attendance, and learning achievement;
- indicators of behaviour affecting health;
- indicators of the quality of various school health programmes.

These indicators are discussed in more detail in the sections that follow.

4.4.1 *Indicators of health status*

Among the required indicators, the greatest base of knowledge exists for indicators of health status. As a result of decades of research, the following commonly used indicators have been developed, identified, and refined (*22*, *115*, *116*): the global burden of disease (measured in disability-adjusted life years or DALYs), the under-five mortality rate, and weight-for-age, weight-for-height, and height-for-age. There is less of a need to continue refining these indicators, therefore, than a need to facilitate collection of the relevant data and their use for improving school health programmes. Appropriate indicators and methods should be selected for assessing and monitoring the nutritional status of children and for evaluating remedial interventions. Wherever relevant, such monitoring and evaluation should be integrated into national nutrition surveillance systems.

4.4.2 *Indicators of ability to learn and learning achievement*

To assess the contribution that school health programmes can make to education, as well the effectiveness of the health education component of school health programmes, indicators of children's ability to learn and their educational achievement must be developed. Measurement of ability to learn requires, at a minimum, measurement of a child's ability to attend and remain in school, which can be measured by enrolment ratios, drop-out rates, and absenteeism. Measurements of literacy, numeracy, and life skills are indicators of learning achievement. Since 1992, a joint UNESCO–UNICEF project has worked with five countries (China, Jordan, Mali, Mauritius, and Morocco) to develop simple, workable, and sustainable methods for monitoring basic education. Literacy, numeracy, and life skills are the primary areas assessed, but other factors (e.g. personal characteristics, school and home environment, and equality of access to high-quality programmes) that influence learning achievement are also assessed through questionnaires for students, parents, teachers, and school administrators (*117*).

Much progress has been made in defining indicators of ability to learn and learning achievement and in using them to improve educational programmes. The primary achievement in this area has been understanding the relationship between a variety of nutritional deficits and a child's ability to learn. This has allowed the development of effective nutrition intervention packages, including food and nutrient supplements. More remains to be done, however. Enrolment, attendance, and dropout rates are easily measured but do not directly assess a child's learning capacity (*6*). Moreover, measures of learning achievement developed in industrialized countries should be made

more applicable to school systems and educational planners in developing countries. The diffusion of such measures is the primary challenge for continued progress in this area.

4.4.3 *Indicators of health behaviour*

Knowledge, attitude, and skills assessments are important but fall short of measuring actual behaviour. One of the primary goals of a health promotion programme is to influence behaviour and support that which is consistent with a healthy lifestyle. However, the development of indicators to measure behavioural change is an area where more research is needed (*118, 119*). Studies demonstrating the relationships among health-compromising behaviour as well as the relationships among health-promoting behaviour have been important in highlighting the need for — and guiding the development of — indicators of health behaviour (*103, 120*). Such findings have led to the development of the life-skills approach to health education, which seeks to build and reinforce the skills and strengths needed for young people to make healthy decisions throughout their lives (*121, 122*). Continued research into the relationship between the risks posed by specific behaviours (e.g. smoking, alcohol consumption, drug use, behaviour that presents risks of injury and violence) is especially important to reduce leading causes of death and disability among children and adolescents (*123*).

4.4.4 *Indicators of the quality of various school health programmes*

The ideas that a school's environment "affects the day-to-day health and well-being of those who interact with it" (*104*) and that an unhealthy school environment can compromise the quality of a health programme (*105*) are well established. Three elements make up the school environment: the physical surroundings, the psychosocial aspects of education, and the community within which the school functions. The greatest number of indicators have been developed for the physical environment. Indicators and guidelines for water and sanitation quality have been published (*57–59*), and a variety of indicators has been established for other aspects of the school environment, such as illumination (*105*). A priority for future research is to develop a simple, adaptable tool to assess the quality of the school environment, making use of the indicators already identified. Such indicators could be embodied in minimum standards that could be monitored as well as serve to encourage improvements.

The development and measurement of psychosocial indicators are less advanced. However, students are an important part of the school

environment and thus must be considered an environmental influence. How do disruptive students, those who are hard for a teacher to manage or those who are clearly disaffected affect the school environment and how does the school environment affect such children? Is it possible for teachers or other adults to identify these students at an early age, intervene appropriately, and prevent the development of disruptive or inappropriate behaviour? These are questions for future research. Much could also be done to clarify what is meant by such concepts as "open communication" between students and faculty and how such factors can be assessed. Another avenue for research is the further development and use of tools to encourage communities to take action to improve school sanitation and hygiene.

The Centers for Disease Control and Prevention in the USA are currently completing the most detailed study ever undertaken of school health policies and programmes (including health education, physical education, nutritional and food safety services, and health services, *124*) at the state, district, and school levels. These data will be used to assess progress towards a variety of national health and education objectives and should be of particular use to educators, public health professionals, and decision-makers at the local, state, and national levels. The data-collection instruments used here should be studied to see whether they are applicable to different countries and cultural settings. They could become the basis for the development of indicators of the extent to which school health programmes are implemented.

4.4.5 *Improving the use of data*

In establishing systems for data collection, especially at the local level, it is critical that mechanisms be established to ensure that the data are used. In many education and health agencies, whether in developed or developing countries, there are "data graveyards". Potentially important and useful information remains in record books, in logs, on sheets of paper, or in computer files. These diffuse sources of information are not reduced to the elements with relevance for developing, implementing, and evaluating school health programmes. How such information is used is at least as important as the nature of the indicators and the manner in which data are collected.

Connections between data collection, intervention, and policy development are often not made. The purpose of collecting data is to influence the development of policies and practices in school health programmes. Unless systems are established that support the use of

data for improving school health programmes, a great deal of the effort invested in school health research will have been wasted.

4.5 The health status of young people

The overall burden of disease among young people is not well understood, either globally or at the country level in many nations. Nutritional problems and helminth infections have been the focus of many research and intervention studies. The current understanding of these problems and their consequences for learning ability has been described (*5*). Similarly, research into the behaviour that underlies the leading causes of mortality and morbidity among school-age children in industrialized countries has been summarized (*103*, *125*, *126*).

Two major surveys are being used to study and monitor the health behaviour of adolescents and school-age children. Both *The health of Canada's youth: views and behaviours of 11-, 13- and 15-year-olds from 11 countries* (*48*) and *The health of youth: a cross-national survey* (*49*) have generated enormous amounts of useful data about the health-related behaviour of adolescents and children in Canada and Europe, respectively. These surveys may provide a useful model for the collection of data about students' health behaviour. Survey questions would need to be modified for different regions and countries, but the approach used in these surveys should be widely applicable.

4.6 The under-representation of girls in school

It is common to explain the under-representation of girls in school as the result of economic, social, and cultural conditions (e.g. the pressure on girls to stay at home and care for siblings or elderly parents, the early age of matrimony) or the special risks to which girls are exposed, such as early pregnancy or sexual abuse and violence. However, more needs to be learned about the precise nature of these constraints and how, therefore, to overcome them (*127*). For example, the lack of water and sanitary facilities is likely to have a disproportionate effect upon adolescent girls' attendance during the days they are menstruating.

Some established findings from research in developing countries should be taken into account to improve girls' health status and increase their enrolment and retention in schools. In areas with a high prevalence of acute respiratory infection or diarrhoeal disease among school-age children, girls have a higher risk of missing school to help care for younger siblings (*5*).

Recent studies have shown that girls have higher rates of goitre — a symptom of iodine deficiency, which is a potentially serious but easily

remedied micronutrient deficiency (*5*). Girls also have higher rates of dental caries (*128*), lower-respiratory infections (*129*), and mental health problems (*130*) than boys. School feeding programmes have been shown to have a greater impact on the attendance and performance of girls (*131*).

4.7 Assessing available infrastructure

The development of national policies to support school health programmes must be based on a clear understanding of what existing resources relate to, or can be devoted to, school health. In many developing countries, trends towards government and programme decentralization, as well as transportation and communication barriers, make it difficult for planners at the national level to determine what resources are or can be devoted to school health.

Situation analysis and *rapid assessment* are two possible methods of assessing available resources. They are similar in concept but differ in complexity, intensity, and the amount of resources they require. Each has been implemented in a variety of settings, from agriculture to environmental management, although neither has yet been widely applied to assessing national, regional, or local infrastructure for school health programmes.

Situation analysis is more comprehensive and requires more time and resources. It uses collection and analysis of existing data, such as programme reports, analyses of trends and prospects, and epidemiological information. These existing data are supplemented by interviews with policy-makers and other key individuals (including school personnel, health workers, parents, teachers, and students) and an analysis of the social support and health information systems (*136*). These data are then used to shape the development of policy and programmes.

The use of *rapid assessment* for the evaluation of school health infrastructure is a potentially useful means of resolving some of the limitations of situation analysis, including the length of time required to gather data and the cost of gathering information from large numbers of people. The World Health Organization, the Education Development Center, a not-for-profit nongovernmental organization in the United States, and the Ministries of Health and Education of the governments of Bolivia and Costa Rica are developing a rapid assessment tool that national governments, United Nations agencies, and nongovernmental organization can use to assess and help strengthen a country's capacity to plan, implement, and evaluate school health programmes.

4.8 The integration of school health programmes

Since the 1950s, a large body of research and writing on school health has developed, primarily in Australia, Canada, Europe, and the United States. More recently, the literature on school health from developing countries has also expanded. Among this literature, however, the portion devoted to research has largely focused on single aspects of health (e.g. nutrition, sexual behaviour, smoking). Relatively little research has been conducted on the integration of programme components, whether defined in terms of the three recognized areas of school health environment, school health education, and school health services or subdivided into the eight-component model described by Allensworth & Kolbe (*23*).

4.8.1 *School health environment*

Studies confirm the importance of a school's physical and psychosocial environment to the health of students and staff and the success or failure of school health programmes (*104–107, 123*). With respect to physical environment, the absolute minimum requirement for school health programmes is the availability of safe water and sanitary facilities. Many other factors, such as illumination and noise levels, are also important. Hazards due to the site or location of the school or resulting from biological, chemical, or physical factors (e.g. temperature, humidity, unrecognized sources of injury) should also be addressed.

4.8.2 *School health education*

Since the 1960s the educational component of school health programmes has received most attention (*51, 91, 108, 110*). A recent review of studies in Europe and the USA indicates that, among those programmes where behavioural change was evaluated, changes were reported with regard to sexual behaviour, smoking, the use of alcohol, the use of marijuana, and exercise (*109*).

The most effective health education programmes exemplify the following characteristics, which can serve as a guide to practice:

- Curricula emphasize the acquisition of skills, are sequentially developed and reflect the interdependence of students, peers, the family, and the community.
- They promote a positive approach to health and well-being.
- They emphasize skills, cognitive objectives, and relevant affective qualities.

- They respond to fundamental health concerns of students and teachers.
- They make use of a wide range of pedagogic techniques.
- They include teacher training (generally provided by training teachers to train other teachers), ongoing technical assistance, and in-service training programmes.
- Classroom activities are supplemented by activities and projects at home and in the community that enhance students' understanding of the family and social underpinnings of health.

4.8.3 *School health services*

Some form of health services are provided to students in virtually every country, although access to and quality of services are highly variable both within and between countries. Although traditionally the province of the school nurse or visiting health practitioner, school health services are increasingly provided through multiservice school-based clinics (*63*). Where clinics have provided reproductive health services, they have shown promise in reducing pregnancy among high-risk adolescents (*133*).

Several common principles mark successful school health service programmes (*63*):

- Programmes are based on a local assessment of needs and resources.
- Service providers and the school are committed to operating in a spirit of mutual respect and collaboration.
- Providers try to respond to the full range of students' needs. Furthermore, access to community services is provided when school services are not available.
- The health service provider in the school maintains close relationships with medical, mental health, social service, and legal service providers in the community.
- The school health services programme and the institutions with which it cooperates develop policies to ensure confidentiality.
- School health services are integrated with the other components of a health-promoting school.

These elements are often absent in developing countries, where the provision of health services is more difficult. A recent survey of school health services conducted by UNICEF in a number of sub-Saharan countries indicated that they:

- are often not based on an assessment of need;
- lack effective strategies for mobilization of community support;
- are constrained by a lack of intersectoral collaboration;
- suffer from both the fragmentation and the duplication of efforts by donor agencies;
- do not have appropriate mechanisms for monitoring and evaluation;
- are not sustainable (Lusakulira–Villeneuve S, personal communication, 1995).

4.9 The cost-effectiveness of comprehensive school health programmes and specific interventions

Working in partnership with Colombia, Ghana, Indonesia, and other countries, the Partnership for Child Development (formed in 1992 by WHO, UNDP, and the Rockefeller, Edna McConnell Clark, and James S. Mcdonnell foundations) conducts operations research projects to determine how sustainable school health interventions can be delivered most cost-effectively. The interventions under study were identified as among the most cost-effective in the World Bank's *World development report* (*22*). The core interventions are the provision of anthelminthic drugs and micronutrient supplements (chiefly iodine and vitamin A), and participatory health education to encourage and promote behaviour that can lead to improvements in health (*134*). These interventions are proposed by UNICEF as an essential package to be provided through schools (*135*).

Nearly every country has a school health programme that could become the starting point for such a comprehensive approach (*47*).

4.10 The diffusion and adoption of innovations in school health programmes

There is often a wide gap between what is known and what is actually put to use. Innovations typically require a lengthy period from the time they become available to the time they are widely adopted. A common problem for many planners and policy-makers is how to speed up the diffusion of an innovation (*115*). Section 4.1 (p. 66) cites some of the relevant research. The process of change is not "linear" but can be thought of as a series of three overlapping steps: initiation, implementation, and institutionalization (*114, 136*). Research pointing out that the adoption of innovations is related to how well they respond to teachers' concerns also recognizes that change takes time and proceeds unevenly (*50, 51*).

4.11 The relationship of health to the school organization

There is no body of research that links health to school organizational characteristics. It has, however, been demonstrated that various characteristics of schools (e.g. the degree of academic emphasis, the availability of incentives and rewards, teaching styles) combine to create a set of values and expectations that can affect student learning (*8, 137*). There is evidently a relationship between these factors and children's psychological health, even if the precise degree has not been adequately measured. It has been frequently noted that in schools where students are valued, there is a high degree of participation, and a healthy environment, behavioural risks like violence and risks to education like uneven attendance are reduced. It is hoped that future studies will include indicators of students' and staff members' health when measuring school effectiveness and organization.

4.12 Examples of how research influences practice

Educational approaches and research methodology are transferable to widely disparate situations. It is time all school health professionals profited from the existing body of collective wisdom (*138*). Consider the following examples:

- Research has demonstrated that teachers will adopt an innovation, first, to the extent that it addresses their concerns about performance expected of them in classroom management and practice, and, second, with respect to its expected impact on students. Without meeting the first criterion, new practices, no matter how beneficial, are unlikely to be adopted and sustained (*50, 51*). In India, in the state of Madhya Pradesh, this research is being put into practice through the Teacher Empowerment Project. Teachers attend seminars where they develop new learning materials and teaching strategies and present demonstrations to their peers. The focus of these seminars is on giving teachers decision-making power, thereby enabling them to control the process of change in their classrooms and increase their self-confidence and status in the community. The project also offers seminars for local education officials and heads of schools, and is coupled with low-cost improvements to the school environment. Preliminary results indicate that large increases in student attendance and learning-retention have been achieved, as well as increased empowerment of, participation by, and satisfaction for teachers (*52*).

- During the late 1980s, the Centers for Disease Control and Prevention in the USA sponsored the first large-scale (5000 students and 150 teachers, in seven states) evaluation of *Teenage health teaching*

modules (*91*), a comprehensive school health curriculum for levels 7–12. It demonstrated improvements in health-related knowledge and attitudes, and a reduction in certain behaviour (e.g. alcohol and drug abuse). One of the most significant findings was that teacher training was a critical factor. Untrained teachers did not achieve the same results.[1] As a result of these findings and other confirmatory research, the Centers for Disease Control and Prevention are:

— providing technical and financial assistance to state and local education and health agencies to organize and develop comprehensive school health programmes;
— supporting training and demonstration programmes;
— supporting a network of 58 teacher training centres among state and territorial education agencies, as well as in the largest urban school systems (since its inception, the network has trained hundreds of thousands of elementary and high school teachers);
— monitoring trends in the practice of important health-related behaviour by young people, so that programmes can be sustained and improved.

- Research has generally linked helminth infection to poor cognitive function, educational attainment, and learning ability (*5*, *7*). There are low-cost, effective treatments that, if applied, can reduce these effects of infection on children (*66*). A project in Montserrat demonstrated the importance of the school as a site for addressing helminth infections in conjunction with the existing health service system. Significant reductions in helminth infection rates were achieved, at lower costs than would have resulted through other delivery methods (*67*).

4.13 Improving the connection between research and practice

The knowledge gained from research must be transferred to practitioners for meaningful results to be achieved. However, such knowledge transfer is less than optimal because there are too few incentives for researchers that encourage both research with the potential for widespread application and the systematic development of promising interventions. Also, practitioners often find themselves in the position of having to tackle a public health problem in a manner prescribed by the community, or in response to a political imperative. Furthermore, the majority of intervention studies are designed to be carried out under highly controlled conditions, which are not

[1] Ross JG, Nelson G. *The role of teacher training and other factors in fidelity and proficiency*. Presented at the 63rd Annual Convention, American School Health Association, 19 October 1989, Chicago, IL.

reproducible over a long-term period or on a large scale. While a growing number of studies have attempted to reproduce experimental results under normal conditions, these appear to be less attractive to academic researchers, even if their relevance to policy-makers and practitioners is greater.[1] The use of action and participatory research, involving students and adults in their own communities, is a powerful means of developing school health programmes and should be more widely used.

The improved training of practitioners in the use of research findings, the extension of action–participatory research methodologies, greater orientation towards applied research, and the rapid reporting of findings would all have salutary results in terms of improving the transfer of research to practice. Further, a mechanism should be developed for collecting and analysing the reports of successful school health programmes from around the world to identify the factors that have led to success which could be replicated elsewhere.

5. Recommendations

More children than ever before are attending school, and for longer periods of their lives. Therefore, in virtually every nation, schools could do more than perhaps any other single institution to improve the well-being and competence of children and adolescents. Yet evidence suggests that schools around the world have difficulty in addressing the critical physical, mental, and social health needs of children and adolescents.

The Expert Committee, having reviewed the current global status of school health programmes, and the opportunities, strategies, and research that can be used to improve them, both now and in the future, agreed upon the following principles and priorities for action. They are based on the recognition that an investment in education is an investment in health; that the health of children significantly affects their ability to learn; and that schools can be health-promoting environments only to the extent that they are healthy organizations for students and staff alike. The Committee emphasized that the school itself, through its culture and its organization of teaching and learning, has a direct effect on the self-esteem, the educational achievement, and the health of its students.

[1] Nutbeam D. *Achieving "best practice" in health promotion: improving the fit between research and practice.* Presented at the First Canadian Conference on Dissemination Research in Health Promotion, Vancouver, Canada, March 1995.

The Expert Committee also agreed that there is a rich base of knowledge on which to act now. Research carried out in both developing and developed countries demonstrates that school health programmes can simultaneously reduce common health problems, increase the efficiency of the educational system, and thereby advance public health, education, and social and economic development in each Member State. Therefore, interventions that have proved effective in addressing the most common and serious health problems should be widely and rapidly implemented in schools.

5.1 Principles and priorities

The Expert Committee recognized that schooling has a profound influence on health as well as education, and therefore emphasized that the following recommendations *must* be implemented if health is to be effectively promoted through schools.

Investment in schooling should be improved and expanded:

Education is a fundamental human right. Therefore, every Member State should provide education in schools that addresses the full range of children's learning and developmental needs, and should extend education to children who are not receiving schooling, including those who have physical or mental impairments.

The full educational participation of girls should be expanded:

The enrolment and retention of girls in school lag significantly behind those of boys. Improving and expanding educational opportunities for girls is one of the best health and social investments a country can make. Every Member State and community should strive to break down the social, cultural, and economic barriers to the education of girls.

The Expert Committee further recognized that to promote health through schools first requires that schools be healthy organizations and meet the following conditions.

Every school should provide a safe learning environment for students and a safe workplace for staff:

Too often the school environment itself can threaten physical and emotional health. The school environment should:

- provide safe water and sanitary facilities;
- protect students from infectious diseases;

- protect students from discrimination, harassment, abuse, and violence;
- reject the use of tobacco, alcohol, and illicit drugs.

Every school should enable children and adolescents at all levels to learn critical health and life skills:

Such education includes:

- focused, developmentally appropriate, skills-based health education in topics such as infectious diseases, nutrition, preventive health care, and reproductive health;
- comprehensive, integrated, life-skills education that can enable young people to make healthy choices and adopt healthy behaviour throughout their lives;
- health education that enables young people to protect the well-being of the families for which they will eventually become responsible and the communities in which they reside.

Every school should more effectively serve as an entry point for health promotion and a location for health interventions:

Schools should prevent when it is effective, treat when possible, and refer when necessary the common health problems of children and staff. Schools should:

- provide safe and nutritious food and micronutrients to combat hunger, prevent disease, and foster growth and development;
- establish prevention programmes to reduce the use of tobacco, alcohol, and illicit drugs, as well as behaviour that promotes the spread of HIV infection;
- treat, when possible, helminth, malarial, skin, and respiratory infections, as well as other infectious diseases;
- identify and treat, when possible, oral health, vision, and hearing problems;
- identify psychological problems and refer those affected for appropriate treatment.

The Expert Committee recognized that many schools can begin to implement the preceding five recommendations now. However, to create truly health-promoting schools, a variety of supportive actions are required from organizations at various levels.

Policies, legislation, and guidelines should be developed to ensure the identification, allocation, mobilization, and coordination of resources at the local, national, and international levels to support school health programmes:

This support includes:

- helping decision-makers and the public understand that schools could provide the most cost-effective means to improve the health of children and thus to advance social and economic development;
- fostering active collaboration between health and education ministries;
- developing school health committees and networks that include representatives of government agencies (such as transport, planning, agriculture, and physical exercise and sport) and nongovernmental organizations who can contribute expertise and resources necessary to improve school health programmes;
- identifying, training, and developing qualified staff at the national and local levels;
- establishing clear lines of responsibility and accountability for school health programmes.

Teachers and school staff should be valued and provided with the necessary support to enable them to promote health:

This support includes:

- providing the resources to train and enable existing teachers, school staff, and school administrators to address the health and educational needs of students;
- involving universities, teacher-training colleges, and relevant non-governmental organizations in preparing new teachers, school staff, and school administrators to promote the health of children and adolescents;
- providing opportunities and facilities for teachers, school staff, and school administrators to improve their own health.

The community and the school should work together to support health and education:

Families, community members, health service agencies, and other institutions have an important role to play in improving the health of young people. At the same time, the school can play an important role

in improving the health of the community as a whole. Such roles include:

- advocacy and support by the community for the development of the school as a healthy organization;
- active consultation and collaboration between families, the community, and the school to improve the health of children and adolescents who attend school, as well as those who do not;
- active participation by the school and its students in programmes to improve the health and development of the entire community.

School health programmes should be well designed, monitored, and evaluated to ensure their successful implementation and their desired outcomes:

This includes:

- developing or adopting in each Member State the most appropriate and affordable methods to collect data about children's health, education, and living conditions, by age-group and sex;
- emphasizing, whenever possible, research that draws on the knowledge and skills of local educators, students, families, and community members;
- developing methods for the rapid analysis, dissemination, and utilization of data at the local level, where they can have the greatest impact.

International support should be further developed to enhance the ability of Member States, local communities, and schools to promote health and education:

Such support includes:

- developing a global school health initiative with concerted action by organizations such as WHO, UNESCO, UNICEF, UNFPA, the World Bank, the World Food Programme, Education International, and the International Union for Health Promotion and Education;
- coordination among international organizations and Member States to share efforts, reduce fragmentation and duplication, and establish a broad vision of comprehensive and integrated school health programmes.

5.2 A call to action

The Expert Committee urges all people to imagine:

- a future in which schools in every nation have the healthy development of all young people as an essential part of their core mission;

- a world where schools take on this challenge and implement new and exciting ways to coordinate the educational process, the environmental conditions within and outside the school, and the range of available health services, in order to enhance the educational achievement and health of young people.

Indeed, the recommendations in this report, if implemented, could help realize the vision evoked above and would make a significant contribution towards accomplishing the major goals of the Global Strategy for Health for All by the Year 2000 and the "Education for All" movement, as well as the World Summit for Children (New York, 1990), the World Summit for Social Development (Copenhagen, 1995), and the Fourth World Conference on Women (Beijing, 1995).

In order to develop more fully the potential of future generations, the Expert Committee calls on Member States, relevant international organizations, relevant nongovernmental organizations, and schools around the world to develop and implement plans for carrying out these recommendations.

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The status of school health (WHO/HEP/ECCSHEP/BP/95.1); *Improving school health programmes: barriers and strategies to improve school health* (WHO/HEP/ECCSHEP/BP/95.2); *Research to improve the implementation and effectiveness of school health programmes* (WHO/HEP/ECCSHEP/BP/95.3).

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Aarø L, Wold B. *Health behaviour in school-age children (HBSC): a WHO cross-national survey.*

Allensworth D. *The comprehensive school health programme: essential elements.*

Birrell-Weisen R, Lee J, Pellaux D. *Life-skills education as a component of a comprehensive school health programme.*

Baldo M. *HIV/AIDS, STD and school health.*

Brellochs C. *School health services in the United States: a 100-year tradition and a place for innovation.*

Bundy D. *School health research.*

Cohen S. *Injury and violence.*

Collins J. *School health research.*

Collishaw N. *Do smoking prevention programmes in schools really work?*

Cross D. *Health promotion for school personnel.*

Ferguson J. *Resourcing the future: the economics of adolescent health.*

Goh EP. *Programme implementation and monitoring of the Trim and Fit Programme (TAF): a case study from Singapore.*

Hawes H. *Comprehensive health education: the concept and its implications.*

Hendren RL. *Mental health.*

Israel RC. *Priorities for school nutrition and food service programmes in developing countries.*

Kamau E. *Health promotion for school personnel.*

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Kolstad H. *Using schools to shape communities.*

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Mokbel M. *School health and school feeding programmes.*

Motarjemi Y, Käferstein FK. *Food safety in the school setting.*

Mott K. *History of international school health initiatives.*

Normand C. *Developing health promotion in schools: political, policy, and economic issues.*

Nutbeam D. *Tobacco use.*

Orley J. *Mental health.*

Paulussen TGW. *School health research: practices and perspectives.*

Philip L. *International movements, initiatives, and programmes that have provided opportunities in strengthening school health at international, regional, and local levels.*

Rice M. *Reproductive health within the school setting.*

Rosenburg M. *Health promotion for school personnel.*

Rowling L. *A supportive school environment for meeting the psychosocial needs of young people.*

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Smith P. *The role of nursing personnel in comprehensive school health programmes.*

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Education confers the ability to combine knowledge, attitudes, and skills and use them to shape one's life and the lives of others. A higher educational level correlates with greater competence in decision-making, a better economic situation, and a higher degree of awareness concerning the benefits of and risks to health — indeed, education can be said to be a prerequisite for health. However, education cannot achieve its potential if young people do not attend school because of poor health and related conditions. Moreover, if children are ill, hungry, or malnourished, or suffer from undue stress, they cannot learn effectively in school. Likewise, early or unintended pregnancy, violence, infectious diseases, alcohol or drug abuse, and other health problems can limit the learning potential of adolescents. Therefore, the extent to which schools can become instruments of health promotion for children and adolescents is fundamental in determining whether they will be both educated and healthy, and whether they can lead fulfilling lives and contribute to building a better world.

This report of a WHO Expert Committee considers how best to make schools truly health promoting. It presents the rationale for school health promotion, cites significant features of the status of school health promotion worldwide, reviews existing research, notes common barriers to effective school health promotion, and offers a set of strategies to overcome these barriers. Many strategies are illustrated with concrete examples demonstrating success. Priority areas for research are also outlined. The report concludes with a set of recommendations that can serve as a charter for guiding the actions of educational and health professionals at different levels — local, national, and international — to advance the common cause of promoting health through schools.

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